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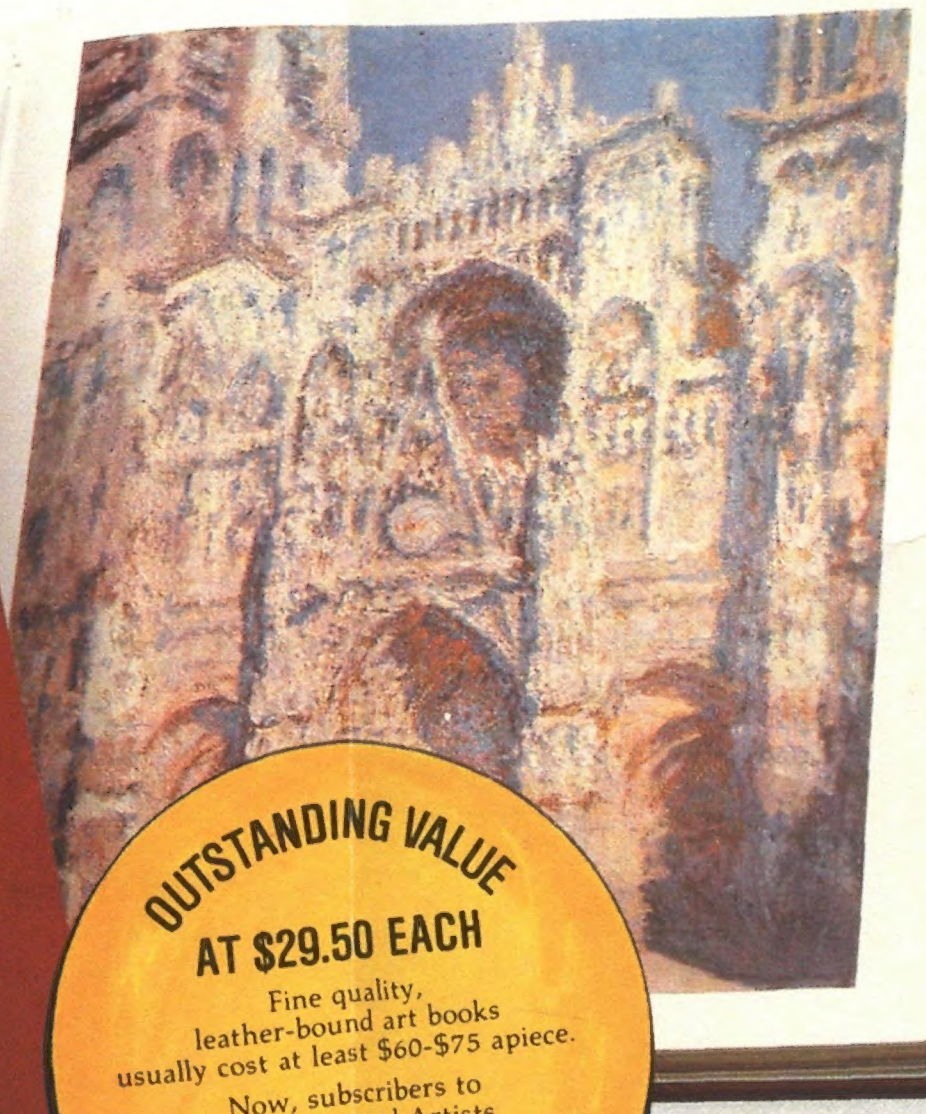

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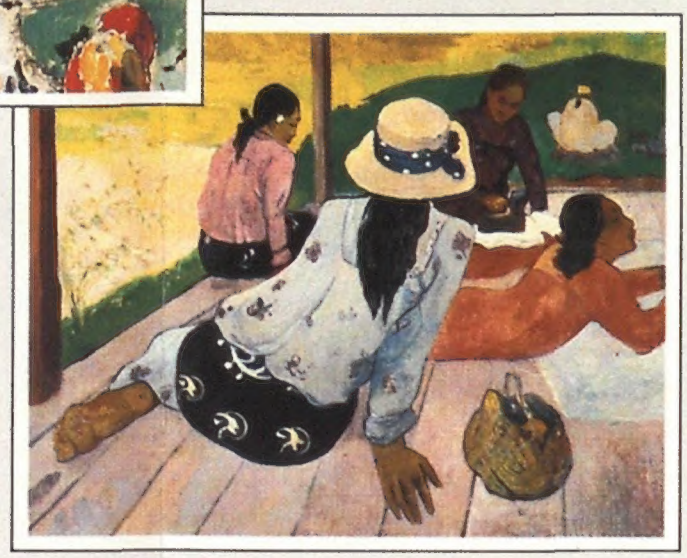

Siesta;
Paul Gauguin, 1893

The Eiffel Tower;
Georges Seurat, 1889

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Volume 13, Number 10

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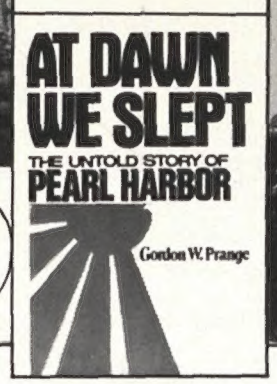

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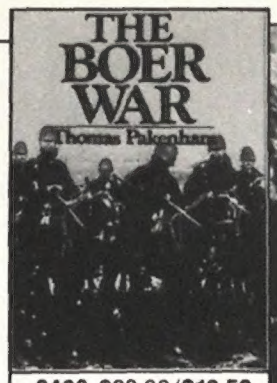

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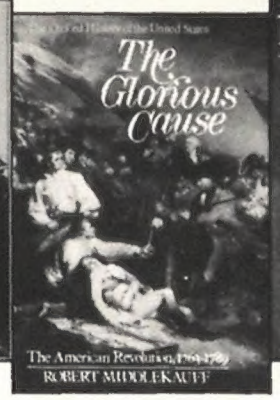

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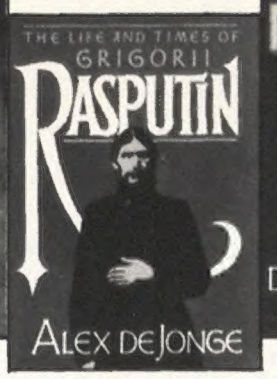

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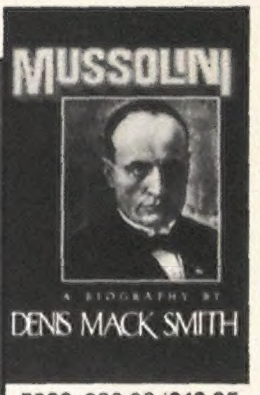

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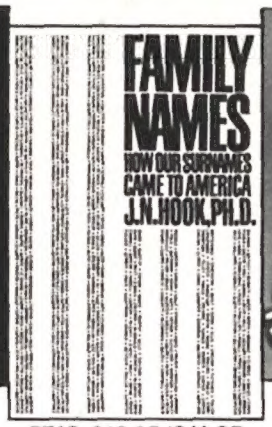

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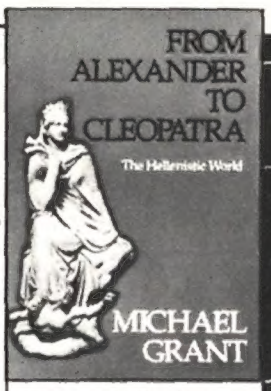

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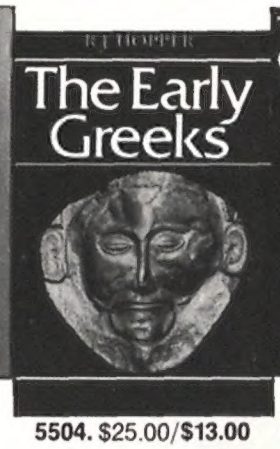

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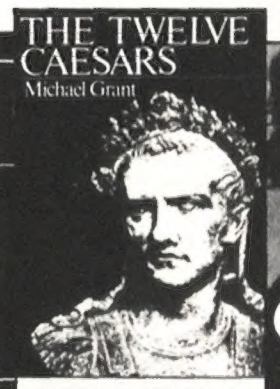

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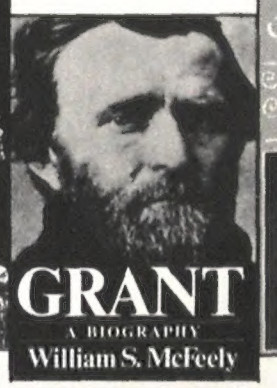

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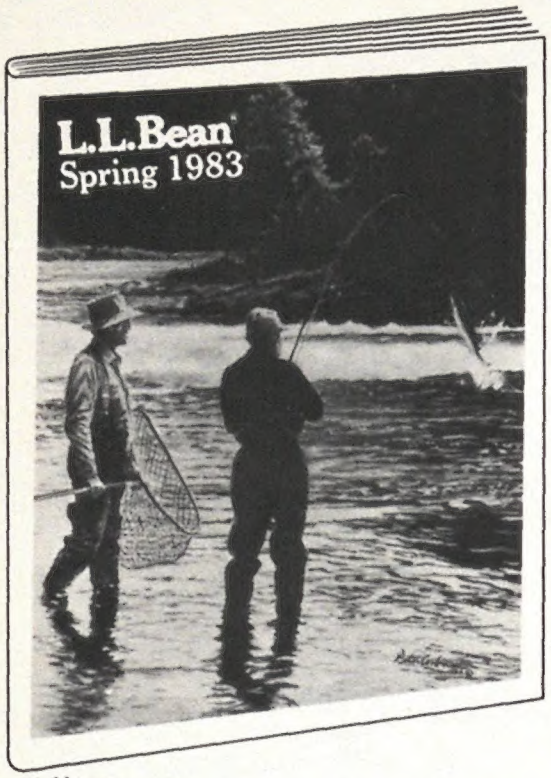

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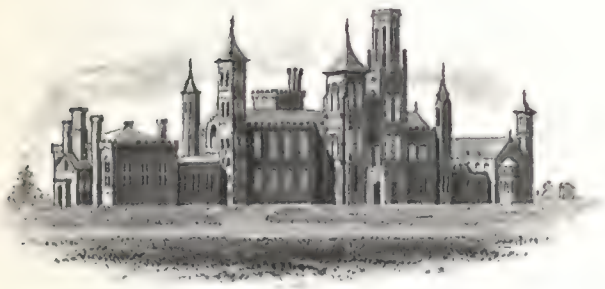

January is a time of renewal, and especially for recovering our aplomb and putting behind us a pervading mood of uncertainty

Dawns in January when the air sparkles and seems to snap, and dun-colored grass is coated with a silver sheen of frost, are full of promise. The orange glow of the sun burning through the haze of last night's mist seems to enliven the air, making the watcher more self-assured, more vigorous. Geese are flying, sometimes right over the city, undisturbed by noises beneath, or easily over the fields, looking for a neglected patch of last season's corn stubble.

January is the month for New Year's wishes and resolves, and a chill sunny dawn lends just the right impetus. The world continues, the season promises a bolder, stronger sun, with an early thaw perhaps. It is a time for renewal.

Our country has been laboring for well on 15 years from a loss of certainty. It is an atmosphere for which Americans are not conditioned. We are not used to nonpositive thinking. Bluff it out is the answer of some. Put thoughts away is another. Pretend the uncertainty doesn't exist. Cover up, one way or another. Morale is as critical in every way, an evanescent mood or atmosphere—elusive if you will, intangible as morning mist or the silvery frozen dew on the grass. Morale has been thin as cat ice for years. The evidence shows in waves of resentment sometimes, an increase in instability, alcoholism, car accidents, bankruptcies, business sluggishness, and a pervading sense of selfishness, turning inward. Everything becomes expendable with egocentrism. The Devil can take the hindmost, say those who accept the Devil's philosophy.

How can we wrench ourselves away from moods, habits of thought engendered by a pervading loss of morale? It can be so easy, looking at the crisp dawn of a new day, that the evidence tends to be lost, the phenomenon of that very dawn overlooked and discounted. Self-assurance comes with such a dawn, and simply remembering positively, like wiping the sand out of our eyes, is all it needs. Remember the dawn, the renewal for the rest of that day.

America is a Brobdingnagian giant, turning restlessly as always from waves of self-confidence to moods of self-doubt. This January is a time for renewal. Let us sop up the good from the Earth, along with the sun's glow, and be renewed in conviction that modesty, humanity, gentleness and care are returning to fashion; that good will prevail, with the humor born of self-realization; and that this country should meditate for a little in such a rosy dawn and realize that we cannot fail. Come walk any day, out of the house, across the crackling grass into that aura of invigorating light, and sense in your blood and bones that reawakening of positive resolve. If you hear the geese, so much the better. Remember they too live for years and are being renewed into a cycle of rebirth and confidence at just this very season.

S. Dillon Ripley

Photograph by Marie Cosindas

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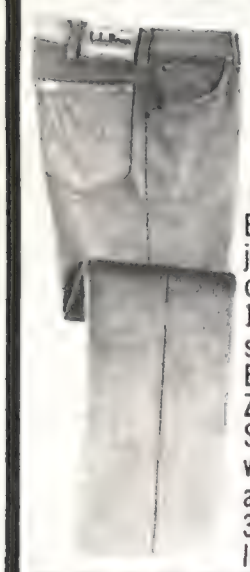

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Letters to the Editor

White-tailed deer

Dear Sir: In your November 1982 issue, it is a sad commentary indeed when one judges the quality of his life by the inconvenience of a few nibbles on vegetables in his garden rather than by the beauty of nature, exemplified by the whitetail.

Man upset the balance referred to by Mr. Mitchell in the first place by destroying the natural predators. Why not a policy of noninterference for a change?
Ann Protheroe
York Haven, Pennsylvania

Dear Sir: I fully appreciate the grace and beauty of white-tailed deer, yet as a fruit grower I know firsthand the frustration and financial setback deer can cause. Our problem in this state was so severe that Penn State University undertook a research project, completed in 1982, to determine a reasonably economical method of preventing crop damage. The conclusion: a four-foot, ten-inch, five-wire electric fence, relatively simple to construct and inexpensive in comparison with other fences. The electric shock is uncomfortable, but will not harm small children or small animals.
Philip A. Roth
Fairfield, Pennsylvania

Dear Sir: In Dulzura, California, near the Mexican border, our young orchard of mixed fruit trees had been well nibbled and there were deer footprints around the trees. I had read about tricks to repel deer and tried the simplest. It worked.

We drove posts into the ground around the perimeter of our orchard and tied heavy white string between the posts at the level of a deer's chest. In ten years we never lost another leaf. There were still deer prints outside the stringed area, but the animals never jumped it or broke it. Just wish it had worked for gophers!
Carla Hinson
Huntington Beach, California

Precisionism

Dear Sir: Your article's mention of Georgia O'Keeffe's fondness for the flowers and the desert of New Mexico stirred in me recollections of our 40-year friendship, during which we have visited back and forth between her home in Abiquiu in the open country northwest of Santa Fe and mine, a two-and-a-half-hour drive over the mountains, among meadows, mountain streams and a green valley.

I photographed her here in the fall of 1978, beside my corral [below], with the aspens and mountains in the background. We share a mutual interest in horses and she has admired my Arabian stallions. Together we have watched the Lipizzaner stallions training in Vienna.

Some years ago, when my nephew and I visited her at Ghost Ranch, we spent the night in our sleeping bags on the roof of Georgia's house. In the morning she climbed the ladder to greet us and liked the view so much she had a mattress brought up and slept on the roof throughout that summer, enjoying especially the evening sunset colors and the early-morning sunrises.

Her admiration for natural objects and creatures extended even to intruding

rattlesnakes, which she used to carefully maneuver out of her house. But later, when her sight was less keen, she was persuaded to erect a snakeproof fence around her front patio. She celebrated her 95th birthday on November 14.
Richard Georg Pritzlaff
Sapello, New Mexico

City of London

Dear Sir: Timothy Green's interesting article overlooks one important thing. Judging from views of the City from the Thames painted by Canaletto and others in the 18th century, what was once the most beautiful city in the world has been transformed into one of the ugliest. The vista along the Thames of Wren's multitude of steeples and St. Paul's Cathedral floating in a sea of low buildings has been destroyed by a forest of high rises.

In 1666 London suffered a cataclysmic disaster in the Great Fire, but was fortunate in farsighted leaders who resurrected her into a jewel among cities. Thanks to Hitler, London was devastated in World War II, but this time was less fortunate. Her planners neglected to limit construction of high rises to areas outside the historic City, and failed to insist on a healthy mix of residential and commercial zoning. Their oversights are the world's loss; the loss is permanent.
John F. Millar
Williamsburg, Virginia

Dunkirk

Dear Sir: A number of inconsistencies indicate that the photograph of the dive-bombing Stuka [p.12] is a montage.

The source of light, the sun, is shining on the tank and terrain from a relatively low angle; on the Stuka, from one much higher. If the light on the tank were the true one, parts of the underside of the Stuka would be highlighted. The light on the bomb comes from still another angle. Since it is highlighted from the left, so too should be the underside of the Stuka. And the Stuka is disproportionate in size compared with the tank.

The Stuka is in a steep dive, much too close to the ground to recover. Using its length, 11.1 meters, as a reference, the plane is about 100 meters above the ground. Since the bomb is nearly parallel to the Stuka, a strong pullout can not have begun.

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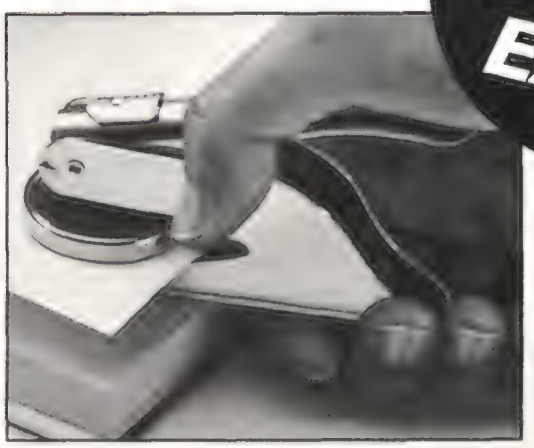

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A number of photos of German military forces "in action" were actually created in the photographic laboratory of the German military magazine, *Signal*, and subsequently disseminated abroad.
Dino A. Brugioni
Falls Church, Virginia

Dear Sir: Walter Lord's splendid article recalls the surge of confidence in the final outcome of the war that Dunkirk meant to many of us. Your introduction, "Dunkirk came to signify not defeat, but triumph," speaks to how many of us felt.
Peter H. Behr
Inverness, California

The Uffizi

Dear Sir: Your article states erroneously that the Uffizi "grotesque" frescoes were based in part upon paintings from Pompeii. Its rediscovery in 1748 rules it out as a source for 16th-century paintings.

The paintings were, as you also say, based on ancient examples in the Imperial Palace in Rome. Those frescoes were in the cellars, known as grottoes, hence the name "grotesque" for the style. The term came to denote the fantastic aspect of semihuman creatures depicted, and eventually any absurd figure.
John S. Kebabian
Becket, Massachusetts

The initial discovery of Pompeii was in 1593, with a random look around, but Kebabian is correct: the frescoes were not seen at that time. Ed.

Mall

Dear Sir: I read Edwards Park's column with special pleasure. What a difference the computer makes! What labor-saving there has been with the present operation at Boulder, compared with what I first encountered here in the winter of 1924 when Teresa Fitzpatrick and her 40 helpers were serving the *Atlantic* by hand! I particularly enjoyed the angry threat of your computer scientist. It is cheering to see one of my alumni writing so well.
Edward Weeks
Boston

Dear Sir: The unfunny side of the Neodata joke is twofold: 700 people at work would be infinitely better for the welfare of the country; and how can you sell Neodata a Ford or home or health care or food, et cetera?

Providing more data processors is the wrong way to go with our vast pool of labor still stuck in World War II technology. We have a lot of icing on our economy but far too little cake.
Ed Carlin
Philadelphia

Phenomena

Dear Sir: Nancy Seaman's report on her attendance at the Third International Conference on Humor was delightful. Ralph Nader, a devotee of humor? How we have come of age! From now on, whenever I see his brooding face I'll look for a hint of a twinkle in those dark eyes.
Bettie Greffét
Tucson

What is a hoya?

Dear Sir: Right here in Texas we have the Trent Go'-rillas (not to be confused with the simian go-ril'-la), the Winters Blizzards, the Hamlin Pied Pipers and the Rotan Yellowhammers.
Thomas G. Lemmons
Abilene, Texas
The Rotan mascot is a handsome flicker, the yellowhammer, but fans tend to think of the team as the Hammers. Ed.

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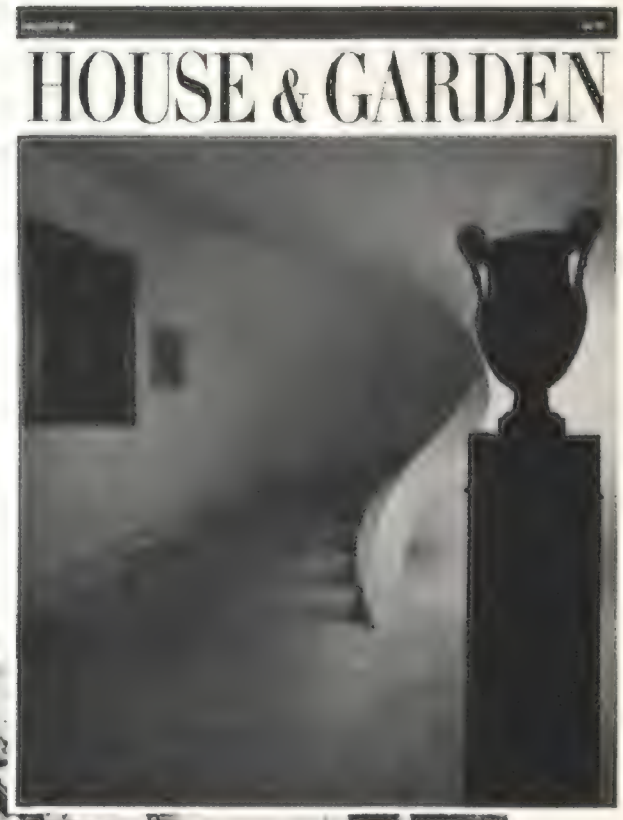

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Around the Mall and beyond

Supreme Patriarch prepares a blessing.

I was recently blessed—by accident—by the Supreme Patriarch of Thailand. It happened during a ceremony at the Museum of Natural History, and I think it's important to let everyone know, so that when people get upset with things I say, they will realize that I've got solid connections and I'm not to be chastised without due consideration.

The Supreme Patriarch is the highest-ranking Buddhist leader of Thailand, and he arrived one morning, accompanied by five monks, to officially open a small, choice exhibit of Thai objects that marks the 200th year of the Chakkri dynasty—the one responsible for the king in *The King and I.*

I reached the ceremony in time to look at some of the objects—models of royal barges and a model chariot, intricately carved and rich with gold; lacquer vessels, teapots, a silver-and-gold-threaded short robe. Most of these were gifts from monarchs of the Chakkri dynasty to various presidents of the United States. There are many more Thai objects at the Museum, dealing with ethnology and archaeology, and the curator, Dr. Paul Taylor, wants to get them sorted out. The small exhibit of gifts was set up—thanks largely to the support of a local Washington group called Friends of Thailand, Inc.—to draw people's attention to the old kingdom, which has been our friend for so long.

Mr. Ripley greeted the Supreme Patriarch, the Venerable Sombej Phraariyawongsagatayana. The Thai ambassador knelt beside him and interpreted. One of the monks—they were all in saffron robes—had a tape recorder. Mr. Ripley gave the Supreme Patriarch a new book about the National Museum of Natural History.

Then the Supreme Patriarch lit a taper and dropped melted wax into a carved bowl filled with water. He rose and, surrounded by retinue, advanced on the exhibit to bless it. First he put his right index finger into a gold chalice containing a white mixture and then made five marks—fingerprints, really—on the sign that, in Thai as well as English, designated the exhibit. Next, he dipped a brush of bamboo strips into the water-wax mixture and ceremoniously flicked drops of holy water on the cases, getting me in the process.

Smithsonian blessings are abundantly spread. The exhibit at the National Portrait Gallery called "Charles Willson Peale and his World" closes this month, but travels to Fort Worth until April and then to New York until September. In our issue of April 1979, we ran an article about the Peale family, but we didn't go into detail about Charles Willson's mechanical inventiveness. At this time of year those of us in northern climes would be interested in Peale's ideas about stoves. The exhibit contains five models that he and his son, Raphaelle, fashioned—rather complex stove ideas making use of intricate flues.

Peale apparently also built a smokeless stove for his museum in Philadelphia. It was concealed inside the pedestal of a

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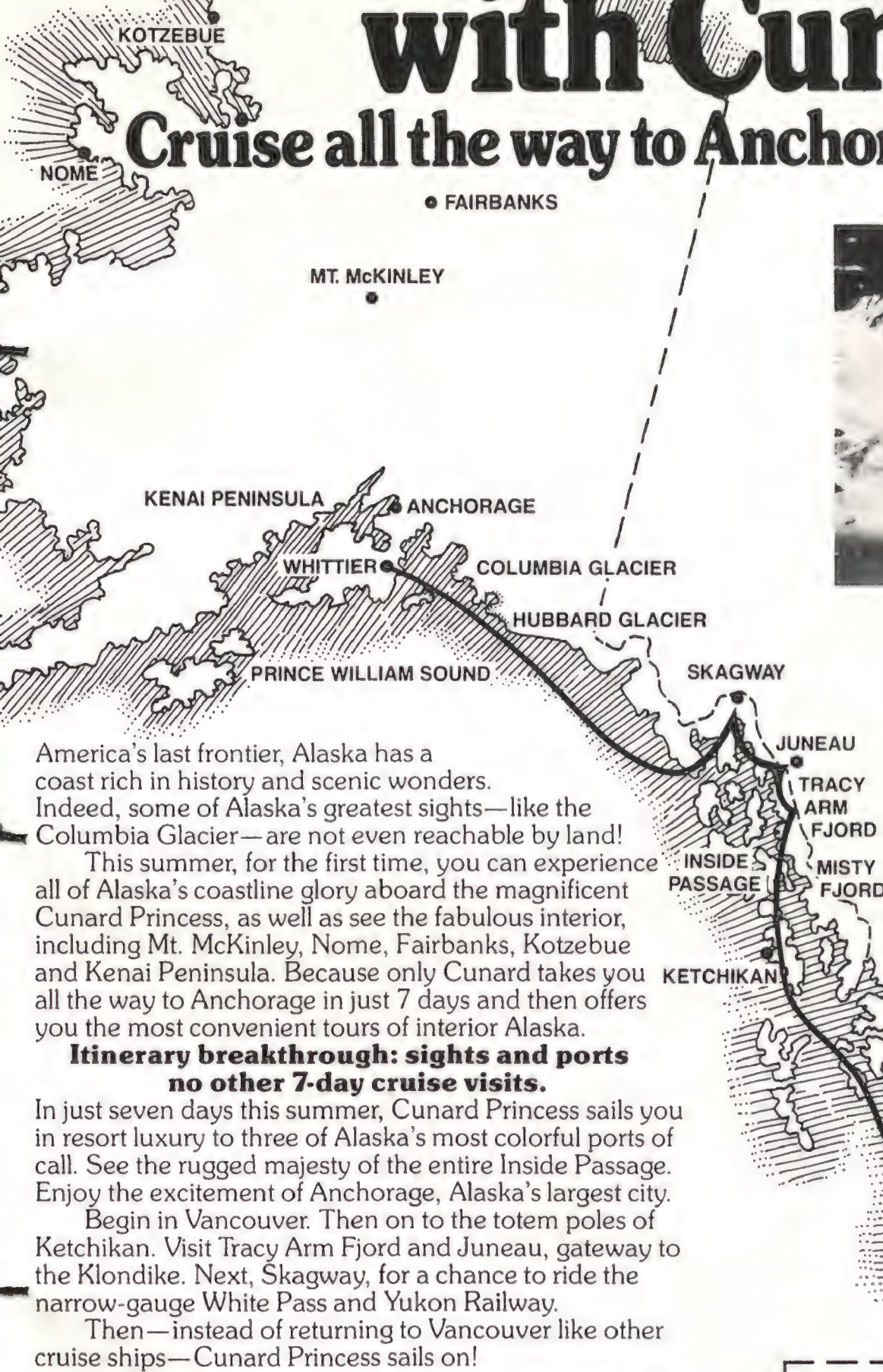

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bust, and he called it the "smoke-eater," because it was designed to recirculate its smoke into the fire and burn it.

One of the highlights of his museum seems to have been the Hawkins physiognotrace. This device, beautifully made of wood and brass, allowed a silhouette to be made on a reduced scale. Silhouettes, remember, were a very popular item at the turn of the 19th century (John I. Hawkins invented this device in 1802), but you couldn't very well carry around full-size ones. So you placed your ear against a little cup on the physiognotrace and then the silhouette maker ran a brass arm around your profile. The motion of the arm was transmitted to another very small arm which carried a penlike point and which traced the lines onto a piece of paper about 2½ by 3 inches which was folded over twice. Then the silhouette was cut out and, presto, you had four handy little remembrances to give to your sweetheart or to family members. More than 8,500 people had silhouettes made at the museum. Among them in 1809 were the Adamses, John and Abigail, John Quincy and Louisa Catherine. You can see them when the Peale exhibit gets to Texas and New York—that is, if you live anywhere near.

Our most far-reaching excursions from the Mall are carried out by the Regional Events office of the National Associate Program. They set up visits that stretch from New London, Connecticut, to San Diego; from Gainesville, Florida, to Fairbanks, Alaska—and points between. Our curators and other experts show up to talk about their particular treasures, to set up workshops and to share their knowledge. They bring the Smithsonian to the country.

The favor was returned last November when the country was brought to the Smithsonian. Country music, that is. The Baird Auditorium in the Museum of Natural History bulged with people who had obviously found an alternative to the National Football League, then on strike. They came to hear two *really* good old boys, guitarist Chet Atkins and mandolinist-*cum*-humorist Jethro Burns, produce a lot of delicious sounds—combining country roots with jazz—in the second of our programs of American country music.

Jethro Burns may be best remembered as one half of "Homer and Jethro," a comedy duo that parodied various musical numbers. They turned Patti Page's hit, "That Doggie in the Window," into "That Hound Dog in the Window," an improvement if ever there was one. He and Homer Haynes worked together from childhood, and the team only folded after Haynes died.

Chet Atkins is Jethro's brother-in-law —they married twin sisters. He says that when he grew up in eastern Tennessee everyone was so poor that it wasn't until the 1940s that word got around about there being a depression. At the Smithsonian, Chet strolled onstage after intermission without an introduction, lit into "Me and Bobby McGee" and a few other things and then said, "Thank you. My name is Chet Atkins," as if anyone had any doubt. When he picks out a tune he's apt to sing a line or two as if he just couldn't help himself.

As a closer to the concert, the two oldtimers played some songs together. Jethro picked out the melodies on the mandolin,

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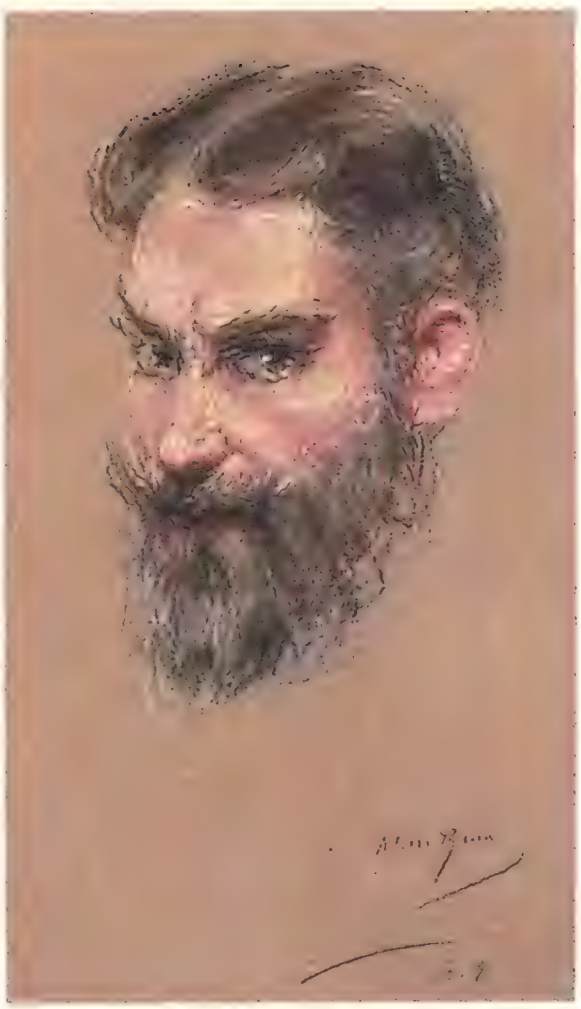
which looks very small when he holds it, and Chet filled in behind him. And of course everyone went wild and got them back "one more time." That's what country music is all about. Who needs football?

Another series of performances takes place at the Barney Studio House, which has intrigued me for years. Mrs. Barney was a wealthy, artistic, enthusiastic lady who, before coming to Washington, had lived in Paris and been accepted in its literary and artistic salons.

Alice was determined to introduce European sophistication to Washington, which was still pretty much a dusty little town, running with tobacco juice. She built her townhouse on a circle along Massachusetts Avenue, and it became her home and studio. It was also designed for the sort of salons she had dreamed of. The downstairs reception room has a raised stage; a studio room has a gallery for musicians.

A current exhibit of some of Mrs. Barney's "things," all reflecting her taste and talent—her own paintings are included—is called "Alice Pike Barney: Bringing Culture to a Provincial Capital." You have until mid-June to pretend you are Sarah Bernhardt or Ruth St. Denis and arrange to visit the Barney Studio House.



Alice Pike Barney made this portrait of the young George Bernard Shaw.

Anyway, the performance series I mentioned was started some two years ago, "Evenings at Barney Studio House." It is then that the facilities for little concerts and theatricals, so beloved by Mrs. Barney, are used again: songs, instrumental music, shadow plays and so on, three evenings a month.

Admittedly, the old house, tall and narrow, barely lit on quiet nights, sometimes seems to show off its memories quite spontaneously, unprogrammed, with no tickets needed, no requirements of proper dress and bearing. On one of the visits I have made to it, I was told that a Smithsonian staffer had shown up alone, a few evenings before, and heard the notes of a piano from a darkened upstairs room. He was startled, for he was sure no one was up there. But being accustomed to the Smithsonian and its ways, he did his best to ignore the prickling of his scalp and went on quietly about his business.

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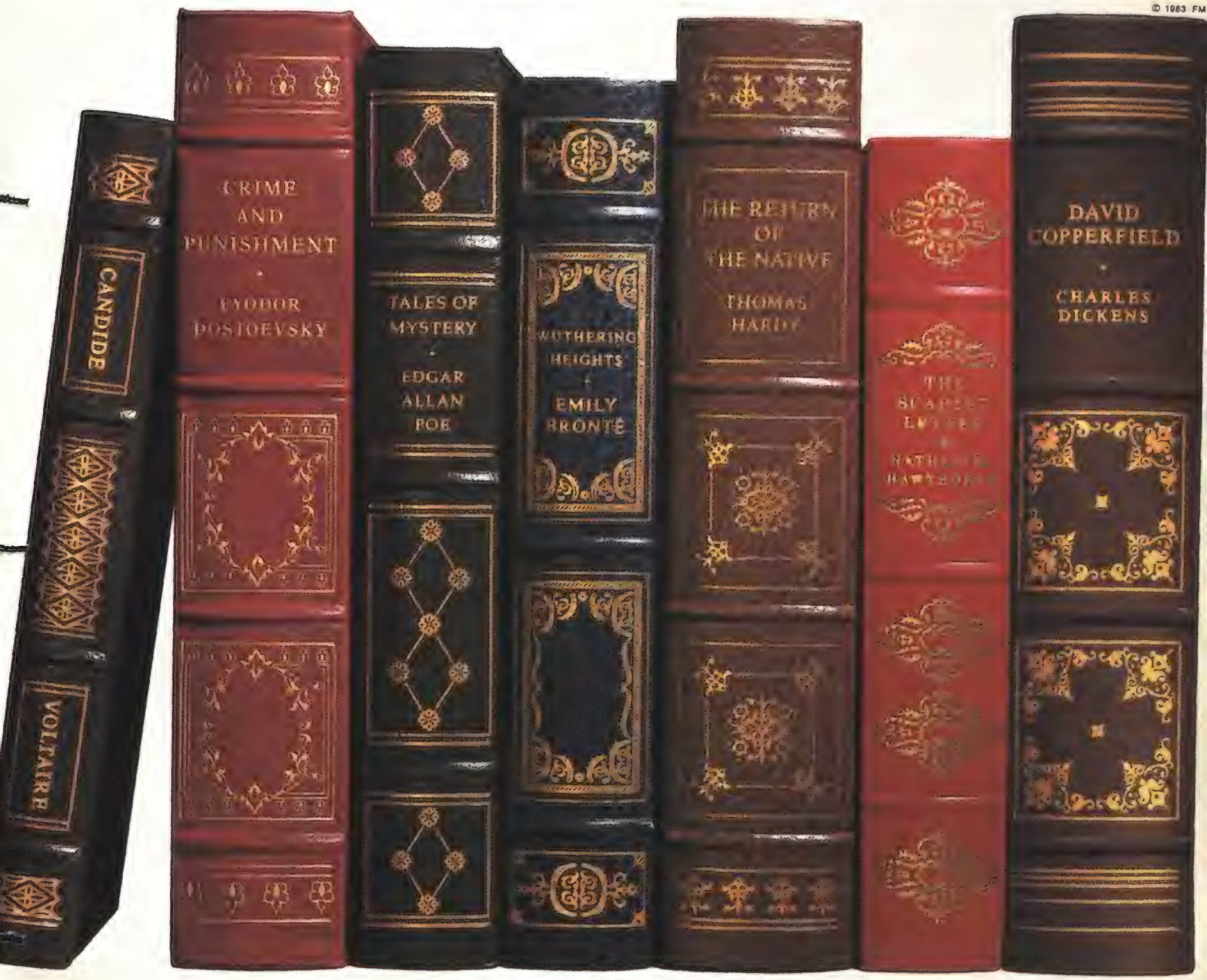

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A great many people are waiting for extraterrestrials to arrive, but it could be that they *are waiting for us*

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More than once, standing in a field at night looking up at the stars, I have found myself thinking "Now would be a good time." I watch for a light that grows brighter, comes closer, swoops in for a landing all unseen by neighbors or military radar. Too many bad movies too long ago, perhaps. For a few minutes one night I thought I had my UFO. Driving along a busy interstate highway, I saw a light in the sky, moving slowly and exhibiting a pattern of brightening and dimming. I pulled over, stopped in a shower of gravel on the shoulder, and leaped out of the car. The light drew closer and closer, until I could see that it was a small plane, advertising the county fair with an array of lights on the underside of the wings.

Many people, I suspect, want the aliens to arrive for the sheer excitement and for the disruption of the routine of daily life. Even before we know the aliens' intentions, we are sure that tomorrow will not be like today and it is easy to feel that any change is good. The problems that weigh us down are suddenly insignificant, and we are caught up in a larger issue, the largest the world has ever faced.

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We have a history of yearning for alien life. The popular response today to movies about lovable, or at least benign, aliens seems little different from the excitement of newspaper readers in 1835 over a phony report that Sir John F. W. Herschel had "discovered" batlike people living on the moon (SMITHSONIAN, March 1982). The hoax could not have lasted as long as it did unless people wanted to believe it. (Herschel himself was in Capetown at the time and knew nothing about it.) Percival Lowell, seeing the canals he wanted to be there, was not alone in adamantly wishing for life on Mars.

And the yearning may be for more than simple excitement. As individuals and as nations we are not generally doing as well as might be hoped, and yet it is not clear how to do better. We live with a sense that we should be doing better, a kind of "divine discontent" once used as an argument for the existence of God. Extraterrestrials arriving in starships would be so far ahead of us technologically that we could hope, even assume, that they were ahead of us socially as well. At the very least they would have avoided destroying themselves and been able to cooperate well enough to travel the stars. Presumably they would have something to teach us about living together as well as about rocket engines. For us they would be a deus ex machina.

On our better days, when we are pretty sure we can muddle through without any help from anyone, we can still prefer to believe that there is life elsewhere in the universe. Otherwise the waste is overwhelming. One hundred billion stars in our galaxy, 100 billion galaxies: a universe billions of light years across and just one inhabited planet? It just doesn't compute. (To fully appreciate this argument, step outside some dark, moonless night and slowly sweep along the Milky Way with a pair of binoculars. And that's just a small part of one galaxy.)

Some of the intellectual arguments, as opposed to emotional longings, for life elsewhere depended on nothing more than numbers. Harlow Shapley, the late Harvard astronomer who first nailed down the dimensions of our own galaxy, was forceful in his book *The View from a Distant Star*: ". . . let us say that only one star in a hundred is a single star, and of them only one in a hundred has a system of planets, and of them only one in a hundred has an Earth-like planet, and only one in a hundred Earth-like planets is in that interval of distance from the star that we call the liquid-water belt (neither too cold nor too hot), and of them only one in a hundred has a chemistry of air, water, and land something like ours—suppose all those five chances were approximately true; then only one star in

Bat people cavort on moon in lithograph that was published after 1835 hoax.

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ten billion would have a planet suitable for biological experimentation. But there are so many stars! We would still have, after all that elimination, ten billion planets suitable for organic life something like that on Earth."

Shapley's worst-case scenario would provide only ten such planets across the hundred thousand light years of our own galaxy. One gets the feeling he thought the real chances were a good deal higher. In fact, in a paper published just a year before that book, he proposed that life could arise on planets not connected to any star but floating in space, self-heating in the way Jupiter is.

There are lots of sophisticated arguments for extraterrestrial life, beginning for me with Walter Sullivan's book, *We Are Not Alone*, and the collaboration of I. S. Shklovskii and Carl Sagan, *Intelligent Life in the Universe*. (Sagan reviewed the updated arguments for extraterrestrial life, and rebutted some of the arguments against, in the May 1978 SMITHSONIAN.)

Not everyone, of course, is convinced. Lots of people would like nothing less than an alien spaceship landing in their backyard. And lots of scientists think they have the answer to Enrico Fermi's demand: Where are they?

The biological argument was summarized in the October 7, 1982, *New Scientist* by Frank J. Tipler, an associate professor of mathematical physics at Tulane University. According to Tipler, the best contemporary thinkers on evolution—Francisco Ayala, Theodosius Dobzhansky, Ernst Mayr and George Simpson—all maintain that "the evolution of an intelligent species from simple one-celled organisms is so improbable that we are likely to be the only intelligent species ever to exist."

In the same article Tipler contends that if intelligent life had arisen elsewhere, it would have spread through the galaxy and would already have arrived here, at least in the form of self-reproducing computer probes. None has arrived, again raising the question: Where is everybody?

So perhaps we are really alone after all. No one is coming to bail us out, no one is coming for a visit, no light will ever swoop down to my field in the night. No god will pop out of a strangely lit

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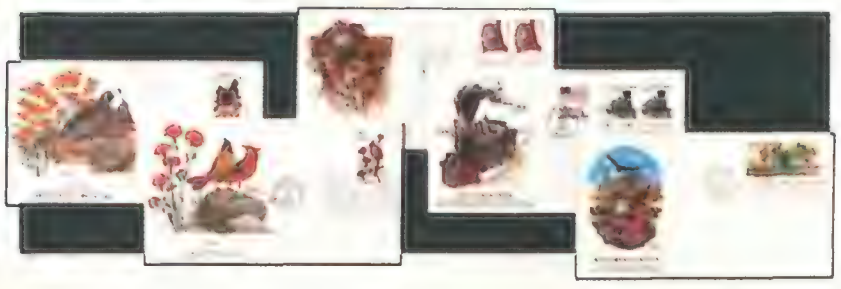

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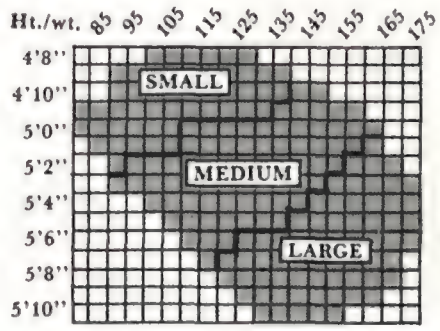

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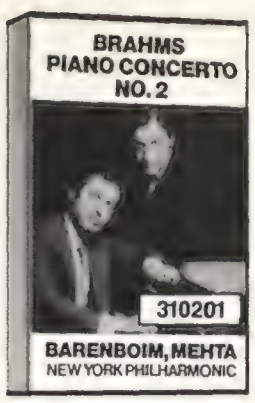

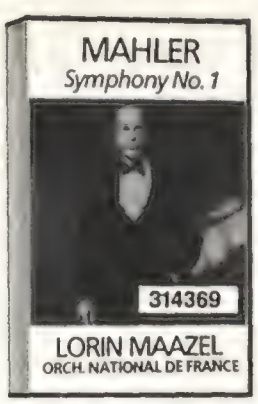

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Points of origin

A pet's life has not always been easy, despite many centuries of doting masters and some help from the saints

In the history of mankind there seems always to have been room for all the tamed animals we now consider pets. The medieval period even brought forth a sort of pantheon of saints specially associated with domestic animals. There was St. Dominic for dogs; St. Anthony of Egypt for pigs; St. Eloy, a French saint, for horses; and St. Gertrude for mice.

Later on, the celebrated English hermit, Mrs. Celestina Collins, epitomized the rising status of pets by invariably dining with her two favorites—a huge and aged rooster with three-inch spurs, and a cozy rat. They dined together in Coventry for many years until the night the rat attacked the rooster, and Mrs. Collins rashly dealt the rodent a mortal blow.

The great pet in history and legend is, of course, the cat. There was a cat cult among Egyptians of the late dynasties, and its best known goddess was named Bastet. I have always thought it touching that, at the town of Bubastis in the Nile delta, cats were mummified lovingly in her honor. The Romans had *Felis catus* to help with mousing and to play with around the hearth. (The designation *Felis domesticus* is modern scientific notation, not a Roman one.) This pet appears in classical Roman art, literature and on coins. There is even a Latin word, *murmare*, meaning "to purr."

The Italian poet Petrarch is remembered by some fugitive lines in Latin attributed to his cat, who seems as beloved as his human heartthrob, Laura. The feline narrator of the verse suggests that he was rewarded by Petrarch for his fidelity even as Laura was for her grace and beauty: "She first inspired the poet's lay,/But since I drove the mice away,/ His love repaid my duty."

The cat has nowhere been the subject of more fascination and respect than in Britain. Indeed, the braininess of British cats is attested by a letter to the respected journal, *Notes and Queries*, in 1868:

"We were talking about the sagacity shown by some animals, when I mentioned the story which I think Archbishop Whately tells in some of his writings, of his cat ringing the doorbell. This anecdote brought out a still better one from my neighbor, who had come in to see me for a chat. He said that when he was about twenty-five years of age, there was belonging to his house a certain cat, which up to that time had not attracted notice for any particular sagacity. But the *pantry* window of the old-fashioned house was found to be repeatedly broken. Time after time the broken square—for one only was broken at a time—was repaired. At length my friend, growing tired of mending, made up his mind to have a board nailed over the lower row of the window-panes. Not very long after this precaution had been taken, being awake one night, he heard in his bedroom, which was close by, several distinct taps, as of a stone, upon glass. Getting out of bed, and looking down from the window, he saw then and there his cat resting with her hind feet upon the window-sill, her left paw clinging to the top of the new board, and with her other paw, in which she held a pebble, she was tapping the glass, in order no doubt to break it. He shouted out, and the cat jumped down, dropping the pebble—about the size of a marble—which in the morning he picked up."

But for all the respect they have inspired, cats have also been cruelly treated in many ages. The municipal records of Colchester, England, detail the 1651 trial of William Beard, who was alleged to have cut off the tail of Tom Burgis' cat. (For their part, the Burgis family retaliated by either poisoning or bewitching their pet's tormentor.)

Medieval students are known to have gambled with cats. As a result, medieval schools usually forbade the keeping of pets of any kind, but to little apparent avail. Students at the University of Paris in the 13th century are known to have used stray cats to play dice by balancing the cubes on their paws, until they flicked them off. Winning cats were fed; losers had their skins sold.

Dogs occasionally suffered similar cruel fates, including, incredibly, being executed along with their criminal masters, or as examples to other animals. There was a late Roman custom of crucifying dogs to repay them for their failure to

The Prado, Madrid

Seventeenth century pets, transfixed by the sweet song of a lutanist, abound in Jan Brueghel the Elder's allegorical *Hearing*, c. 1716.

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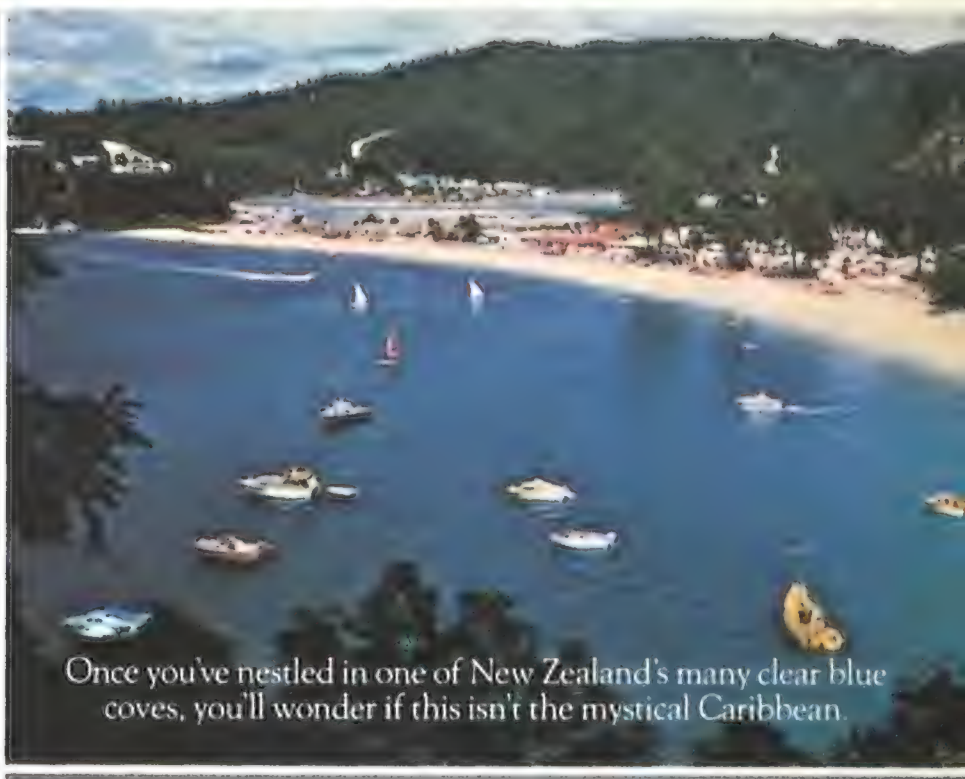

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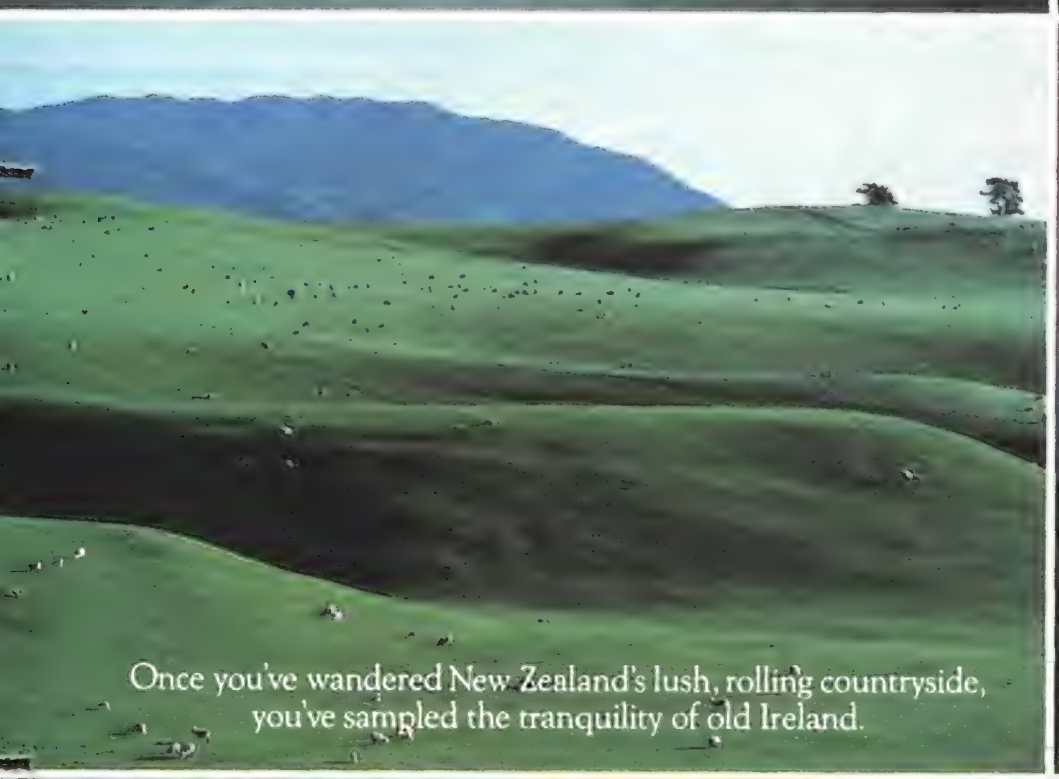

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warn the city of the approaching Gauls. Wolves were hanged along with parricides in Scandinavia and Germany, and criminals were hanged with dogs to show the enormity of their disgrace. A 16th-century cleric, Rorarius, noted that it was the custom to crucify lions to dissuade them from entering North African towns, and that wolves were still being hanged at that time in German forests as an example to their recalcitrant brothers.

The folklore associated with dogs, like that of cats, is rich and varied. A belief in East Anglia held that if a dog turned around three times, a stranger would call. A person should never handle children's teeth that were accidentally knocked out: otherwise, he himself would grow dog's teeth. These superstitions were current in the 19th century.

Dogs were thought by the ancients to be able to see ghosts. Dogs of the Middle Ages were associated with the mythical mandrake, the reputed medicinal powers of which had been celebrated in antiquity. Its root resembles a man's body, and medieval legend had it that when plucked from the earth it issued a blood-curdling scream that meant sure death to whomever heard it. So, since the root conferred great powers of sorcery on its possessor, harvesting was accomplished by finding a hungry black dog, tying it to a mandrake root, and then calling it for dinner. When the dog dashed for its meal, it pulled up the root, heard the scream, fell dead and so sacrificed its life for the good of its master.

The reputation for faithfulness attached to dogs gave rise to their being a symbol of fidelity, and to their being selected to appear on tomb effigies with ladies and knights of great stature. In one celebrated case, a dog was buried along with the body of a 13th-century bishop. A liturgical reason for this is obvious. As the shepherd of his flock, a bishop has a fit companion in the dog.

As for the "pet" saints of the medieval Christians, their stories are as memorable as they are charming. For example, St. Dominic is symbolized by a dog (at his birth his mother dreamt she had brought forth a whelp with a torch in its mouth), and fittingly founded the religious order called the Dominicans (from the Latin, *Domini canes*, "dogs of the Lord").

St. Anthony of Egypt (c. 250-350) was the saint of swineherds, and is often shown in medieval illustrations with a tiny pig at his side, a symbol of his function as a hospitaler saint, for pork fat was used to dress the wounds of Saint Anthony's fire, a frightful skin disease prevalent in the late Middle Ages. One of the customary complaints in medieval villages occurred when people let their pigs wander loose. Most towns enacted laws aimed at this nuisance. Only the St. Anthony pigs, belonging to local monks, were exempted from such strictures.

The legend of St. Gertrude (626-659) is much the same. In liturgical art, she is often shown so absorbed in prayer that she is able to ignore a tiny mouse—a symbol of evil ever since St. Augustine referred to the cross as "the mousetrap of the Devil"—running up her pastoral crozier. In time, water from the well of her chapel in Nivelles, France, was prized for its magic powers in repelling this disciple of Satan, and tiny cakes baked at her convent were sold to be taken home to keep the devil-mouse at bay.

Although Aristotle flatly states that fish are the only creatures that cannot be tamed, a cult of St. Anthony of Padua (1195-1231) seems to give the lie to that assertion. The legend records that, at a time when a group of heretics refused to be moved by his preaching, he turned his voice to the shore of the Adriatic and addressed the multitude of fishes, which obliged him and arranged themselves neatly according to their species. When the good saint pointed out that God had spared them alone from the destruction of the deluge, and that they were also insensible to the vicissitudes of the weather and seasons that attack the world above water, "the fish, as though they had been endowed with reason, bowed down their heads with all the marks of a profound humility and devotion, moving their bodies up and down with a kind of fondness." Such was the tale presented to Padua tourists in 1705, when the English essayist Joseph Addison recorded his travels in Italy.

A similar legend is attached to the medieval lore of St. Patrick, on whose feast day the fish were expected to rise from the sea and parade before his altar. St. Patrick might well have sent the snakes away, as every true Irishman knows, but to my mind bringing the fish back was a much bigger feat.

Michael Olmert

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By Tui De Roy Moore and Alan Moore

Peru's largest park safeguards biological treasure of the tropics

The richest diversity of animal and plant life in Amazonia—from jaguars to giant otters—is preserved in a Green Mansion called Manú

Large eyes of night monkey testify to its nocturnal habits. This individual is the pet of an Indian.

Nearly four million acres of luxuriant tropical forest; hundreds of miles of meandering rivers shared by caimans, piranhas and anacondas; jaguars stalking tapirs in the deep shadows; roving bands of white-lipped peccaries; 13 species of monkeys swinging through the towering trees; more than 500 species of birds, from macaws to motmots, toucans to tinamous, in dazzling abundance; families of giant otters, one of the world's rarest mammals, playing in hidden oxbow lakes; and elusive Indians, whose language and ways of life are still unknown to the outside world. Lost visions from the days of such explorers as Alexander von Humboldt, or the hallucinations of a frustrated naturalist? Neither; they are glimpses of Manú National Park, nestled on the eastern slope of Peru's southern Andes.

Beginning above 13,000 feet, the topography of this enormous park drops vertiginously within a few miles to less than one quarter of this elevation. In its upper reaches stand craggy peaks, where Andean condors soar and frost occurs nightly. From here the Andean puna, dominated by tussock grass and stunted alpine flowers, gives way abruptly to dense montane forest that blankets deep, precipitous valleys. Tangles of creeping bamboos and other impenetrable vegetation, nurtured by an annual rainfall that may reach 30 feet, give shelter to pumas, the endangered "taruca" or Andean deer, and the rare spectacled bear. The runoff, cascading over crystal-clear waterfalls, eventually converges to feed the meandering Manú River far below, after which the park is named. Here the waters, now heavily laden with red clay, flow more slowly through steaming jungle which, unspoiled by modern man, supports one of the greatest abundances of tropical forest wildlife found anywhere in the world.

The Manú River meanders through lowland rain forest in eastern Peru, an area of rich biological diversity.

Encompassing nearly the entire watershed of the Manú River, the majority of the park consists of humid evergreen forest, with an annual rainfall averaging about six feet. Although the forest never loses its damp, luxuriant appearance, and showers do fall occasionally, a dry season stretching from May to September inhibits the establishment of epiphytes (orchids, for example), so that they are relatively scarce. At this season the river level drops considerably, ex-

Typical riverine rain forest lines the banks of the Manú, itself a tributary of the Rio Madre de Dios.

posing snags and extensive sandbanks where caimans bask and turtles lay their eggs, while many smaller tributaries dry up completely. Still, with its high canopy, strangling vines and giant philodendrons, the forest demonstrates the tremendous vigor typical of the tropical environment, where the living cycle—the time it takes for nutrients to travel from the green leaf through the decomposition process and back to the green leaf—is one of the shortest in the world. In the Amazon, fertility is not in the soil, but in the green web above it.

Our own journey began in the timeless town of Cuzco, the ancient Inca city perched 11,000 feet above sea level in the Peruvian Andes. After last-minute preparations, including the filling of two 55-gallon drums of gasoline that would fuel a motorized canoe up the Manú River, the park's battered pickup left the Indian-filled town square. A short distance south we turned off the paved highway and onto a tortuous logging road, so narrow that it is used in one direction only, changing direction on alternate days. Because only half of our party of six, including two park wardens and a mechanic, could ride in the cab at any one time, we took turns riding in the back. Amid spare tires, fuel drums and enough food and gear to last for the next two weeks, we contemplated the Andean scenery under a fathomless mountain sky.

Late in the afternoon we reached the last mountain pass before plunging over the brink of the Andes, into deep valleys leading to the Amazon basin. Mist now enveloped us and a cold rain was beginning to fall. Huddled behind the gasoline drums, we marveled at the sudden changes in the vegetation, which became lusher by the minute as we descended deeper into the forest. The steady rain ran in clear streams down the rutted road, and from the steep, overhanging slope water trickled from ferns and orchids down our necks. It was late at night when we reached the muddy town of Pilcopata and found a dry bed in a small hotel.

The next day the four-wheel drive carried us to the road's end in Shintuya, where lumber, freshly cut from the forest, was being loaded from large canoes into Cuzco-bound trucks. We board a sleek, 40-foot dugout canoe, whose hull was carved in one piece from a massive tree and equipped with a 40-horsepower outboard motor. For two more days we traveled, down the clear flow of the Madre de Dios River, then up the reddish waters of the River Manú, before at last we reached the border of the park and the Pakitsa ranger post. At night we pitched our tents on exposed sandbanks, listening to the forest's myriad sounds; by day we glided upstream, dodging snags detectable only by the eddies on the muddy surface. We began to understand why Manú is so rarely visited.

But already the trip was proving worth the effort. Shortly after we passed the last small farming village at the mouth of the Manú River, wildlife began to appear; almost every new bend in the river revealed the presence of birds, mammals or reptiles. A pair of horned screamers, as large as turkeys, strutted on a sandbank, emitting strange booming sounds, while groups of macaws, some blue and gold, others scarlet, screamed in the treetops. Squadrons of green parakeets zigzagged high above the river; sun bitterns, like flashing ghosts, receded up small streams; troops of black spider monkeys and rusty-red howler monkeys swung from tree to tree; and growing numbers of caimans and turtles sunned themselves on the banks.

Creatures heard but not seen

Countless sounds, barely noticeable and always indistinct behind the wall of green, betrayed a host of creatures which, although forever present, we could never distinguish from the deep shadows of the forest. Some sounds we could identify, like the clear, repetitive calls of the toucans, and the muted crescendos of the trumpeter bird drifting out of the forest with the oncoming night, or the chilling roars of the howler monkeys. Most we could only guess at.

Shortly before reaching the guard post marking the park entrance, we saw our first jaguars, a mother and her cub drifting through the early morning mist across

The authors, husband and wife, are naturalists who live in the Galápagos. Tui Moore wrote about frigate birds in the March 1980 issue of SMITHSONIAN.

An alarmed-looking jaguar swims across the river; moments later it tried to climb into the authors' boat.

a sandy beach. Just as she slipped into the trees she yawned at us; then they were gone, swallowed by the forest. Wherever we landed the gray sand of the riverbank revealed more details from the living world of Manú in the innumerable tracks left by passing animals, nocturnal and diurnal.

Many factors combine to make Manú National Park one of the most remarkable conservation areas of the world. Not only does it rank as the fourth largest national park in South America, but it is also one of the most untouched natural areas of the entire continent. Furthermore, the western Amazon region in which it lies harbors a far greater species diversity, both in plants and animals, than any other part of Amazonia, which in itself contains one-third of all known plant species in the world. Curtis Freese, a biologist with the United States Fish and Wildlife Service who has studied primates in Manú, regards its species richness as one of the highest in the world.

John Terborgh of Princeton University is another biologist who feels that Manú is an incomparable scientific gem. For nearly ten years he has been conducting research in the park, as well as supervising the

Giant otters, two yards long and extremely rare, swim at Cocha Cashu, a small oxbow lake in the park.

work of a succession of some 40 students and other investigators, covering subjects as diverse as seed predation by white-lipped peccaries, the pollinating roles of non-flying mammals and the feeding habits of boat-billed herons. Still, Terborgh feels that he has barely scratched the surface, for the wealth of studies that could still be carried out in Manú National Park could run into a very long list indeed. Yet the very isolation that has ensured Manú's protection limits the type of research that is feasible under such conditions. By its nature an area like Manú is slow to yield its secrets, particularly with regard to the more complex ecological relationships.

Still poorly understood are the groups of indigenous peoples living within the park boundaries. Two of these groups, representing an unknown number of individuals from the Amahuaca and Yaminahua tribes, have thus far had almost no contact with the outside world. They roam the forest as hunter-gatherers, living much the same way their forebears did before the arrival of Europeans. Adolfo Cuentas, the superintendent, explained to us the park's official policy with regard to these natives of Manú: "Our aim is to avoid all interference with these people's lives, in hopes that they will not alter their ways, and thus remain in balance with the environment."

A true mystery surrounds three Indian women who frequent the banks of the Manú River. Park rangers told us of finding their shelters from time to time, particularly during the dry season. Once, the rangers stopped at one, put out some food, hid and waited. When the women did arrive, evidently from a food-gathering expedition, they examined the strange footprints that had invaded their camp, then promptly hurled the suspicious food into the river. As soon as the men revealed their presence the three fled into the forest, "like terrified animals," they recounted.

Red-and-Green Macaws peck at a riverbank, a source of minerals. Elsewhere their numbers are dwindling.

Best found in steep ravines above watercourses, an Andean Cock-of-the-Rock perches in cloud forest.

The Tiger Heron, named for color pattern that shows only when young, prefers insects and animals to fish.

Nevertheless, sometime later, contact was made with the women, and to everyone's astonishment it was found that in no way did their language resemble that of any of the neighboring tribes. Recordings of their speech, later circulated in the region by an intrigued priest, were recognized as a distant dialect used by a small group of modernized Indians living outside the park. Where, then, had these three women come from? Could they be the survivors of a tribe mysteriously exterminated by tribal warfare? Or were they vagrants who had somehow lost contact with an as yet undiscovered people? Anthropological studies of the park's indigenous groups have been very sketchy, and to date such questions remain unanswered.

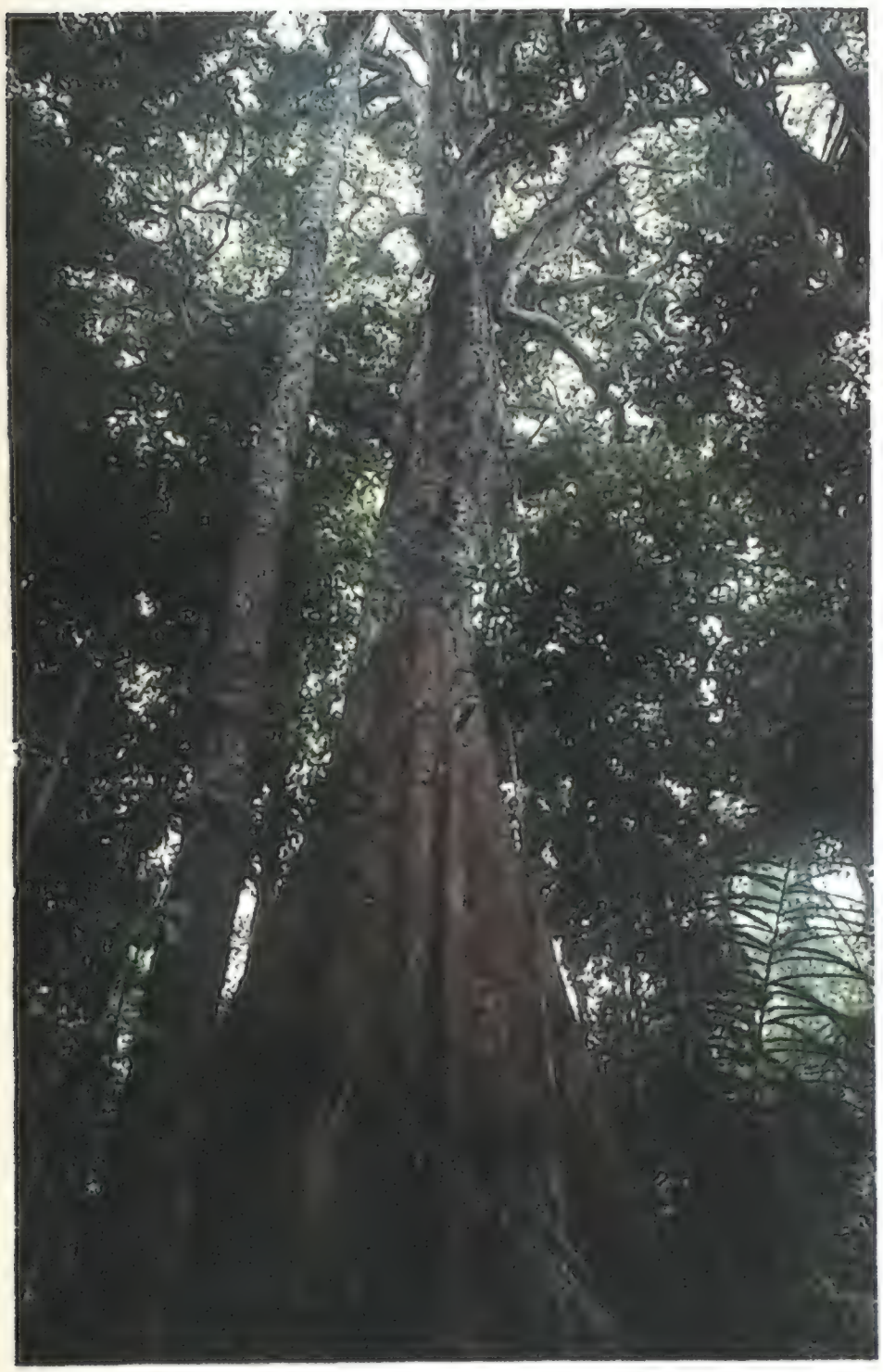
In the camp of the Indian women

One day as we traveled downriver we came upon a primitive campsite, which the park wardens recognized as belonging to the three women. Several small fires, apparently built to drive away mosquitoes, were still smoldering, although the coals indicated that they had not been tended for several hours. A crude lean-to of palm fronds had been constructed the previous night. These fronds had not been cut, but simply twisted from the plant. The shells of roasted palm nuts lay scattered on the sand.

A rudimentary basket of woven palm leaves held their few belongings: a peccary's skull and sharp canines, apparently used for cutting; two drumlike pendants, made of round segments of wood and adorned with fibrous twine and beads made of shiny brown seeds; and a blunt stone ax cemented to a wooden handle with black tree resin. Oddly, the basket also contained a neatly wound ball of nylon string! Beside the basket was a crude, crooked bow and arrow, made with a piece of the same synthetic cord. For a long while we stared at these scant possessions, as well as the small, bare footprints in the sand. Then we continued our journey, the outboard humming in the back of our canoe as we tried to imagine the three naked figures moving silently along a dark forest trail in search of food.

The next day we stopped at a river bend where a small path leads to Cocha Cashu, a tranquil oxbow lake where a small screened-in, thatched hut serves as research quarters for John Terborgh and other scientists who spend several months each year working in Manú. No sooner had we set foot ashore than the sound of cracking branches drew our attention to the opposite bank. A horde of white-lipped peccaries, at least 30 strong, erupted from the green tangles and launched themselves into the river. Snorting and splashing, they crossed and landed a short distance from where we stood. Never pausing, they trotted

Four million acres of tropical riches



A buttressed species of *Sloanea* soars to the canopy of the lowland tropical rain forest in Manú National Park.

over the sandy beach and disappeared into the forest, a brief apparition from the damp, green shadows.

At Cocha Cashu we observed an astounding variety of birds and other animals. Macaws, parrots and various monkeys frequented the canopy, while great flocks of parakeets descended upon the green fruits of certain low trees by the water. Tiger Herons (p. 39) stalked the shallows, iridescent hummingbirds flitted about the understory, and all along the lake's edge clumsy Hoatzins, those strange primitive birds whose wing structure shows similarities to *Archeopterix*, the oldest known fossil bird, crashed about the low branches, barely able to fly. Some had their nests in the low foliage overhanging the water, and we knew that, if alarmed, the chicks would plunge beneath the surface for safety. The danger past, they would clamber back to their nests, making use of strong claws at the wrist of their underdeveloped wings.

Reptiles were also strongly in evidence at Cocha Cashu: river turtles stacked like dominoes on floating logs, and numerous black caimans, including one nearly 12 feet long, plied the waters. Another had learned to accept fish scraps from the park wardens who attracted him by slapping a paddle on the water's surface. Also living in the small lake was a group of seven giant otters (p. 37). They cavorted noisily around the small dugout canoe we used to explore the lakeshore, raising their angry-looking faces above the surface while crunching large fish they caught, or snorting and squealing when one of the wardens imitated their strange sounds. These were some rare survivors of one of the world's most endangered mammals, hunted to near extinction for their pelts.

A jaguar too close to photograph

One morning we landed on a sandspit to fish just outside the park boundary. Several catfish and piranhas had already been netted when, not 30 yards away, a jaguar leaped from a pile of stranded logs and loped into the forest. It seemed incredible that it had simply sat there for ten minutes or more while we talked and walked about unaware of its presence. Shortly thereafter we came upon yet another jaguar, this one in the process of crossing the river (p. 37). Moving at good speed, we approached so closely that the panicked animal, momentarily disoriented, tried to reach out and pull himself aboard the canoe. To our utter frustration he was now too close to permit good photography with the telephoto lenses we were carrying! This was not the last jaguar we encountered, however. Perhaps attracted to the exposed riverbank by an unusual spell of cold weather, an extraordinary six jaguars were seen over a span of only five days.

Certainly, to us as to many others, Manú seemed

A butterfly rests on one of several side-necked turtles quietly sunning themselves at Cocha Cashu.

Not much larger than a house cat, ocelot cub is a park resident.

Capybara, the world's largest rodent, weighs about 110 pounds.

The black spider monkey has been exterminated in much of its range.

Four million acres of tropical riches

The park is home to more than jaguars and monkeys; here a moth of the genus *Urania* rests on a twig.

like a conservationist's dream come true. Yet many problems face this outstanding national park. Peru is a struggling, developing nation, whose resources often must be stretched beyond their limits. And while the Peruvian government has shown a strong determination to preserve this natural treasure, the threats remain close at hand. Lumber, gold and oil are in increasing demand throughout the world, offering ever more tantalizing rewards to a country whose economy is in dire straits. Skins of both caimans and spotted cats can bring quick wealth to the enterprising poacher, while turtle eggs and other animal protein become increasingly coveted as human populations in the region continue to grow.

John Terborgh, who is more intimately familiar with Manú's situation than perhaps any other person, warns of the consequences that an economically troubled, demoralized park administration could bring. He feels that it is particularly important to make as many people as possible, worldwide, aware of the uniqueness and value of Manú National Park. He recommends the promotion of well-managed tourism to the park, which has begun to take place on a very small scale. Needed urgently, however, is some definitive planning concerning where and to what extent tourism activities should take place within the park. At the present time, the two-day canoe ride needed to reach its boundary effectively limits visitors to a trickle; most do not venture past the Pakitsa entrance post. The travel time could be cut in half by the rehabilitation of a small airstrip at the confluence of the Manú and Alto Madre de Dios rivers. A management plan for the park is being drawn up by Peruvian authorities.

World concern for a national park

In the past, Manú's isolation alone has served as a dominant factor in protecting its ecological integrity. This could easily change, however, as there is talk of a major road construction plan which, to open new frontiers in the Amazon basin, would bisect the park. While this project may not be imminent, it could if implemented irreversibly affect Manú's value to mankind and the world. Park authorities and conservationists are well aware of the problems they face, and are struggling to maintain far-ranging priorities ahead of the pressing economic needs of their country.

Manú is not just a Peruvian National Park. In 1977, at Peru's request, Manú's vast untouched lands, as well as about 865,000 acres of adjoining national forest and private landholdings, were declared a Biosphere Reserve by UNESCO. As one of more than 200 Biosphere Reserves recognized internationally in 55 countries, Manú joins a select group of areas that will

eventually represent examples of all of the world's major ecosystems. The inclusion of adjacent altered regions within the reserve provides researchers with the opportunity to compare the ecological effects of different land-management practices carried out in these "buffer" zones with the unaltered system within the park. Manú benefits from a system of information exchange and contacts with scientists working in similar protected areas in other parts of the world.

Other international organizations have also helped protect Manú. The World Wildlife Fund has been instrumental in providing the park with equipment and other facilities, without which effective control over the area would have been difficult to achieve. At the same time international interest places additional responsibility upon Peruvian officials to ensure the park's future integrity. More important, it is a reminder of the value that the world places on Manú as a scientific and cultural resource. Curtis Freese, in speaking of the alarming trends in over-exploitation of tropical ecosystems, says: "As these places diminish and disappear in the wake of continued deforestation and development, a protected Manú will assume even greater importance in the future." This, in turn, makes it only logical that Peru should not be left alone to shoulder the burden of its stewardship.

Bryophytes, ferns and aroids predominate on cliffs over which waters cascade into one of park's rivers.

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Tossing a box and waving umbrellas, a class in environmental dance gives an outdoor performance.

By Alan Rich

They used to call it Mickey Mouse U, but not these days

CalArts, born of a Walt Disney dream, is not a celluloid fantasy, but a respected and inventive center for arts education

There was more to the art of Walt Disney than met the delighted eye. Beyond his public life, as the inventor of a diverse middlebrow art more popular than the world had known, there was that other, more private Disney, the keen and happy observer of the arts in their purest state, the idolater of any honorable cultural innovation. This Walt Disney dreamed of a wonderful, unique school, a community of artists where creativity in talented young people could be nurtured with complete freedom, with none of the traditional boundaries that usually divide the many realms of art one from another.

And while the world constantly honors the memory of the public Walt Disney, on movie and TV screens, in book and toy shops, and in the hearts of anyone who ever was young, that private Walt also has his monument, a school like no other and its hundreds of talented—and, for the most part, employed—graduates. Born some 14 years ago out of a sublimely improvident madness, the California Institute of the Arts has now become one of the great progressive forces for the arts it serves—music in its broadest definition, painting and sculpture, graphic design and photography, filmmaking, theater and dance.

"Dad always dreamed of The Arts. He talked about them in capital letters," Diane Disney Miller told me

Photographs by Rob Lewine

Graphic design teacher Louis Danziger (right) goes over Oren Schlieman's work in studio classroom.

recently. The elder of Disney's two daughters, she is married to Ron Miller, former University of Southern California football star and now head of Walt Disney Productions. "He was determined that all his studio artists, even the veterans, should have the time to study serious art while they worked."

Already, in the early 1930s, Disney had arranged with an art school to run courses for his animators, and it was from this early connection that his grander plan probably emanated, a school dedicated to a magnificent impurity—where, for example, music and film could work toward a unity of language as Disney himself had tried to do in *Fantasia*. "The trouble with universities," he once told a reporter, "is that they restrict students from learning a lot of things." He talked, with mounting enthusiasm over the years, of a "workshop idea, with students being able to drop in and learn all kinds of arts . . . a kind of cross-pollination that would develop the best in its students."

In the early 1960s Disney had acquired two small Los Angeles art schools, both of them bankrupt, and saw them as the foundation of his own venture into education sometime in the future. And, when Disney died, in December of 1966, he bequeathed a large part of his estate in trust to "CalArts." Three years later, this most unlikely of all Walt Disney's dreams came to fruition in temporary quarters in an old Catholic girls' school near the Disney studios, and then in November 1971 in its own building.

Approached from the outside world—specifically from Interstate 5 some 35 miles north of that hypothetical place known as downtown Los Angeles, the blocky structure of CalArts promises little. ("CalArts" is now the preferred nickname after several unsteady years of being known as "Mickey Mouse U.") The building might be another of those sprawling, multilevel affairs that can work as anything from electronics

Art shows up everywhere, even in the hallway of Main Building, which is covered with high-spirited graffiti.

Pioneer animator Jules Engel (left) gives expert advice in animation studio to student Dorne Huebler.

lab to shopping mall. But it doesn't take long, after you pass through the first set of double doors on any typical school day, to set the illusion to rights.

Past those doors you come into the main gallery, a huge rectangular-shaped area, its high walls interrupted by a surrounding balcony. You enter and, as at apparently all California colleges, you are met by a pack of resident dogs of uncertain breed and provenance, friendly and hospitable. To the left, a door leads into a small theater paneled in dark wood. Here drama students are doing body exercises, mirroring one another's movements in pantomime, chanting vowel sounds to loosen vocal cords. Off to the right is a larger theater, remarkable in its design. Each square yard or so of floor space is actually the top of a hydraulic piston that can be lowered or raised, so that this "modular theater" can instantly change its shape.

Elsewhere, in a small classroom, several students stand around a complex electronic installation while composer Morton Subotnick (p. 51) discusses acoustical envelopes, voltage control, and other abstruse aspects of the new language of musical composition by synthesized sounds manipulated by computer. A student demonstrates an exercise in composition at what looks like the keyboard of an ordinary piano. But the sounds are not those that Steinway would recognize; the notes from the piano activate the computer's circuitry to produce a mind-boggling range of tones.

Down a stairway, a long corridor is lined with perhaps 60 young people, some on one leg, some in a headstand, in leotards, shorts, jeans; they move in slow, graceful, Oriental-inspired patterns—learning, one of them tells us, how to center body and mind. At the end, in a small theater dubbed "The Bijou," film historian Richard Whitehall shows his class a Jean-Luc Godard classic. Nearby another kind of filmmaking is under consideration, in a video studio eerily lit by lights blinking onto enormous control panels. Here a computerized film-editing system is in operation, programmed by students in a class on composition in motion, creating a counterpoint of images superimposed one on another.

Close by are a pair of gamelans, gorgeous arrays of Javanese and Balinese instruments (rebab, gong, ageng, trompong, suling . . .) in a 40-foot-square room. Next door there is an African drum collection of comparable splendor.

Even on this casual trip of exploration, the feeling emerges of a school in which the customary boundaries have somehow been bypassed. We move on. In an elongated studio given over to traditional film anima-

Alan Rich, a noted music critic and author, writes for California *magazine and is currently writing a series of documentaries for radio.*

Costume Design Program head Martha Ferrara adjusts puppet costume for theater student John Dagget.

tion, several renowned artists from the Disney studios are at work with students in a sketching class. One teacher is the great Disney veteran T. Hee, whom we meet delightedly after admiring his name on film credits all these years. In another studio there is a lively discussion on the more abstract aspects of film animation, led by Jules Engel (p. 49), who worked with Disney on *Fantasia* but then went on to create Gerald McBoing-Boing and the nearsighted Mister Magoo for one of Disney's rivals, UPA. Farther along the corridor there is a small student lounge, and next to it a "Coffee House Theater" where several art students are rehearsing a performance-art piece. Latin music blares while two dancers circle one another; in the background a film is being projected. It's all very tense, and we need some air. Out through a door and onto a field, we find some members of the Environmental Dance class choreographing a work to be performed outdoors.

Cross-pollination, indeed! CalArts today has become the triumphant embodiment of Walt Disney's own idea that the dividing lines between the arts, or even between the forms within any one artistic medium, have lost their meaning, and that true artistic expression should flow easily and without restriction across these boundaries.

Early days and ideas

"Walt once told me how weary he was that he had become an industry." This is Mel Powell reminiscing. Powell had been one of the great jazz pianists of the 1940s, had played and recorded with Benny Goodman, and then had gone on to found the electronic music studio at Yale in the early 1960s. He was one of the first people approached by the Disney family to help in the founding of CalArts. He had come eagerly, even at the sacrifice of tenure and honor in an Ivy League ivory tower, and doesn't for a moment regret his choice. "Walt was upset by the way bankers had got in the way of his vision, and upset also at how artists in the various fields never got to know one another. He'd push into music sessions, just to ask the musicians what they were doing and why. He was like a kid, and I guess he wanted to build CalArts so that kids could ask these kinds of questions of one another."

Today CalArts exists, which is a miracle of sorts in itself, and it teems with students asking questions—850 of them, some at the drop of something like just over $5,000 a year, some on one of the scholarships with which the school is reasonably well endowed. If you want to tune in on the hard questions, drop by at, say, 4 A.M.; the building is never locked, and the bull sessions get more animated as the night wears on. This is where you come if you're a student writer looking to

Composer and faculty member Morton Subotnick at keyboard of a digital/analog hybrid synthesizer.

find out how composers think, or a composer looking for a partner for a mixed-media experiment. Then Walt Disney's dream of an artistic community resembles some kind of wacky, wonderful reality.

One of the earliest brochures for CalArts, circa 1968, contained visionary overtones. Robert Corrigan, the Institute's first president, wrote of "the perilous course between adventure and discipline . . . the audacity to move in new directions." Such words seemed to portend a cultural Oz presided over by a McLuhanite Wizard. Nobody seemed to mind the paradox of all this as the unlikely legacy of Donald Duck; such objections were outweighed by the belief that the funding would flow from a bottomless well. Under the twin banners of cash and freedom, CalArts assembled its first faculty, from the likes of Corrigan and Mel Powell, who dared to abandon plum academic posts on the East Coast, or Jules Engel, who delighted in the idea of teaching a radical approach to film animation on the payroll of his one-time boss and rival. Leonid Hambro (p. 52), well known as both a serious concert pianist and as the sidekick of Victor Borge in his traveling stage show, forsook his six-figure Borge income to come and teach piano at CalArts. "Why there?" I ask Hambro. "What's so different about teaching piano at CalArts instead of at Juilliard?" "Very simple," says Hambro in one of his rare moments of seriousness, "my methods are too freewheeling for most other schools. When I decided I wanted to teach, CalArts seemed like the perfect place."

If the golden battlements of CalArts held out gleaming prospects to its first generation of teachers, it is not hard to imagine how these prospects looked to the school's first students—ranging from a horde of talented but disaffected artists, wearied of the traditional academic notion that new art is born from close examination and imitation of old masters, to others vaguely "artistic" in the abstract but mostly looking for a place to hang out.

There are wonderful stories from those early CalArts years. One charter student remembers a poetry course in his first year that entailed meditation sessions at sunrise in a geodesic dome. Another remembers coming for the first time into the newly completed dormitories, being presented with a huge array of disconnected modules out of which she was expected to design and assemble her own furniture. One former student, today a respected composer, performed so brilliantly in his first composition classes that his teacher sent his name in for a teaching assistantship, only to discover that the fellow wasn't even enrolled at the school.

It didn't take long for the bills to roll in from that first foray into Utopia. The school had gained an expensive building lavishly equipped, and a distinguished faculty also assembled with seemingly reckless disregard for cost. To the outside world, however, that splendor did not yet add up to a respectable venture in the arts, and the trustees became aware that more people knew about the CalArts idiosyncrasies than about its bold views on unified education in the arts.

Dean of Film/Video School Ed Emshwiller, in left foreground, talks with students about a video project.

Concert pianist and faculty member Leonid Hambro instructs student Geordi Gudyka prior to a recital.

Since these trustees included several members of the Disney family who leaned more toward Walt's middlebrow public image than his private artistic idealism, the inevitable questions began to be asked. In 1972 Robert Corrigan and several of his closest associates departed the scene, and for the next three years the school operated on a reduced budget under a chief executive officer chosen from among the trustees. The rumor went around that the idea of converting the CalArts property into profitable real estate was discussed more than once.

It's a little startling to realize, faced with CalArts today—its incredible artistic energies expended along lines not very different from Walt Disney's own dream, its graduates preeminent among today's crop of rising young musicians, filmmakers, art directors and photographers—that the rise, fall and resurgence of the place have taken place within little more than a decade, or that Robert Fitzpatrick (p. 54), the man generally credited with reversing the school's failing fortunes and status, has been in the president's chair for little more than half that time.

"In 1975," he remembers, "I found myself facing a distinguished college trustees' board, telling them we had to go out and raise two million dollars in two months' time or shut the school once and for all. I also heard myself telling them that if they weren't willing to give full energy to the job of saving CalArts, they ought to vote themselves off the board." Ten trustees—a third of the board—did just that.

Whatever this brash executive fireball, now 42, told that board, it worked. For all its origins as a school whose faculty had initially fought even the idea of issuing a course catalog, or setting up graduation credits, or handing out grades, the school was visited in 1981 by an accreditation team from the Western Association of Schools and Colleges, which then issued its report without a single suggestion for change of curriculum or course-credit system.

Fitzpatrick has a pretty good handle on why the first CalArts dream didn't work. "The trouble with Utopia is that it doesn't exist," he says. "Take the money business. All of Walt's legacy had gone into a splendidly equipped building. Everybody believed that there'd always be money to run the school itself. But then came 1971 or so, and the economy changed, and people started yelling about extravagances.

"And then there was this dream of the perfect place for the arts, with all the disciplines beautifully mingling, every filmmaker composing symphonies, every actor a perfect graphic artist. Sure, it's a great idea as far as it goes. But nobody had noticed that each of the arts has its own pace, its own rhythm, and its own demands. One of my first moves was to make all the divisions separate, to give each dean complete autonomy in his field, and to make the intermingling available to the students who could profit by it as a resource, not an obsession.

"Still, the school cannot be for everybody who wants to go into the arts. It's not a good school for shopping for a career. It is a good school for someone who has already made a commitment, who knows how to find

In the video editing room, student Joe Celestes checks the sequence on a CMX 340 computer video editor.

the right teacher and then to milk that teacher dry. That usually means that he's better off coming here after work at another school than as a beginner."

A pretty clear statement, this seems to me, of a clear-headed, contemporary approach to the teaching of the arts—if, indeed, the notion of *teaching* individual, progressive self-expression isn't a contradiction in terms. There's strong evidence around that it isn't, at least at CalArts. You can test this at the school itself or you can test it in the real world outside. In music, for example, the word has spread about the CalArts 20th Century Players, a group of students and young faculty members conducted by Stephen Mosko that can take on the most complex innovative patterns with the ease of a virtuoso attacking a C-major scale. That group has made astonishing recordings (including some of Morton Subotnick's spellbinding pieces for live and computerized ensembles combined).

Another musical ensemble, the Sequoia Quartet, took shape at CalArts in the hands of four talented string players who are now hailed as one of the finest American chamber groups. Jules Engel, who has taught there more than a decade, points to the fact that some 95 percent of his students are working full-time in film animation, including a veritable horde at George Lucas' *Star Wars* manufactory in Northern California. And one New York-based art director, Tom Bentkowski, who has worked at several major magazines on both coasts but who has never himself set foot in the place, speaks admiringly of the work he sees from CalArts-trained illustrators and photographers: "wonderfully free from the clutter that comes from excessive worship of old masters, full of a real exploratory spirit for what's around today, or even tomorrow."

Don't get the idea, of course, that every daybreak at CalArts is a phenomenon of virgin birth; the old masters, or, at least, the middle-aged masters, are accorded their place in the school's pantheon. A piano student who ventures into Lee Hambro's class is given the same routine of Bach and Beethoven that he would be handed at Juilliard. ("If he wants to play the classics in some totally off-the-wall manner," Hambro says, "that's OK with me, but only after he has proved that he can play it the composer's way as well.")

A dance student may master one of the difficult choreographies developed by the school's free spirits. But every dancer must learn basic modern dance techniques and must also do the classical *barre* workouts; traditional ballet classes are given weekly by one-time classic ballerina Mia Slavenska. Why? "Because," says Christyne Lawson, the innovative artist who heads the CalArts dance department, "there's still no better way to train a dancer." Moreover, every student at the school, however creative he may be with heart and hands, must subject his head once a week to a core program in "Critical Studies," in which the arts are put forth by brilliant lecturers as a subject for thinking as well as doing.

What makes the ideal student? "Most of all, a commitment to the exploration of new work," says Fitz-

Design students assemble in illustration classroom, move to loft (background) for individual projects.

In Modular Theater sophomore students rehearse a Greek tragedy, the *Eumenides* by Aeschylus.

patrick. "That, plus some awareness by the student of where he or she is going. The student who fails here is usually the one who doesn't know what to ask for, or is too shy to ask. When we ask someone to leave, it's usually not on the basis of passing or failing some set number of courses; it's usually the faculty's judgment that the person has no hope for a career in the arts."

"The ideal composition student should actually be willing to fail," adds Morton Subotnick. "I mean, he should be ready to extend himself, to try ideas. There's only one way to teach composition, and that's by having students write, write, write . . . without worrying about criticism. Sure, when a student pays upwards of $5,000 we owe him some real teaching. But nobody can do for these people what they can do for themselves. And we can only send them out into the world when they've achieved their own identity and know what they want. That's why we don't stress completing the program within a set time frame. We just teach, or guide, and you get your degree when you're worth it."

It's an extraordinary mix, this CalArts blend of exploration and awareness—if not actually reverence—of tradition. Today there is little visible sense of a Disney presence; only one room, a small musical theater named after Walt's brother Roy, keeps the name in view at the school. (Currently only five trustees out of 32 are from the Disney family or studio, and Disney-linked money accounts for about 12 percent of the CalArts income.) But there is another film studio in the building that bears the august name of Louis B. Mayer, as solid a guarantee of respectability as any film program could hope for.

Beyond this, CalArts has amassed its own masters, old but vividly alive. Among their numbers is Mel Powell. And there is grizzled Ed Emshwiller (p. 51), the hero of New York's avant-garde cinema circles two decades ago, now guiding young filmmakers through the mysteries of computer-assisted visuals. And there is Jules Engel, whose solid-color backgrounds devised for the "Nutcracker" sequence in *Fantasia* were considered revolutionary, still on hand to define for his admiring students the nature of innovation.

There was a kind of madness in the conception of CalArts, and there have been several kinds of madness inherent in the fact that the place has continued and grown. But it is possible, confronted with the enormous creative energy of students like the several I've observed, and in hearing the wise counsel of the people who guide their thoughts during their years at CalArts, to suspect that this improbable and improbably conceived hilltop sanctuary may contain some of the more encouraging answers to the world's artistic future. It may be true, of course, that innovation, or even middle-of-the-road self-expression, is beyond the reach of an educational program, no matter how unstructured. Even if that is true, there is a good definition of CalArts from one of its distinguished filmmakers, whose own classic comedy, *Tight Little Island*, might serve as a pretty good description of the school spirit. When it comes to teaching the arts, Alexander Mackendrick likes to say, there is probably no ideal place, but CalArts is, beyond any question, the least worst.

Disney money built Main Building (background), but Robert Fitzpatrick raised funds to keep school growing.

Student Lori Cromer wears an imaginative costume for a dance created by a student choreographer.

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Holland America Westours to Alaska

By Jim Doherty

Was he half hype or sheer hero? Buffalo Bill takes a new bow

'The Last of the Great Scouts' is back again in a road show complete with film, posters, paintings, costumes, guns—even a stuffed bison

There's a terrific cowboy-and-Indian show playing around the country these days. The star, a husky, goateed fellow on horseback, wears a fancy buckskin jacket, shiny thigh-high boots and a white Stetson. When he's not shooting glass balls out of the air or rescuing pioneer women from Indians, he is busy attending to urgent matters backstage. He turns up in posters and playbills, in photographs and oil paintings, and even in a brief film where the public can see him announcing the show's other acts. "Ladies and gentlemen," he proclaims, doffing his hat with a courtly flourish, "permit me to introduce to you a Congress of Rough Riders of the World!"

If that sounds a tad old-fashioned, there is good reason. The stalwart showman is none other than that celebrated ex-Pony Express rider, buffalo hunter and Indian fighter without peer, Col. William Frederick Cody himself. It's Buffalo Bill!

For more than three decades around the turn of the century, "Buffalo Bill" Cody toured the country with his fabulous Wild West show, dramatizing the legendary American frontier even as the real one faded into history. Today "the last of the great scouts," as he liked to bill himself, is back in the saddle again. And, once again, he is surrounded by some of his favorite troupers from the good old days: sharpshooting Annie Oakley, cowboy star Buck Taylor, Indian chiefs Red Shirt and Iron Tail, and of course the great Sioux leader, Sitting Bull. This time around, though, the "show" is a bit more subdued than the original. It's a traveling, multimedia exhibition. Along with the films and artwork are costumes, a small arsenal of guns, and such memorabilia as a lock of his hair and a stuffed bison, all from the Buffalo Bill Historical Center in Cody, Wyoming, the town that William Cody helped found in 1895.

Last year, *Buffalo Bill and the Wild West*, as the exhibition is called, drew happy crowds and rave reviews at the Brooklyn Museum in New York before moving on to acclaim at the Carnegie Institute's Museum of Art in Pittsburgh. Next month it is to open at the Colorado Historical Society in Denver. After pulling up stakes in May, it will migrate to California for a summer at the Oakland Museum.

It is no surprise that Buffalo Bill is still packing them in. He always did. He was arguably the most famous personality of his time, an international superstar adored by the masses everywhere and feted by royalty in the capitals of Europe. (His wife, not known for her sense of humor, named Queen Victoria as core-

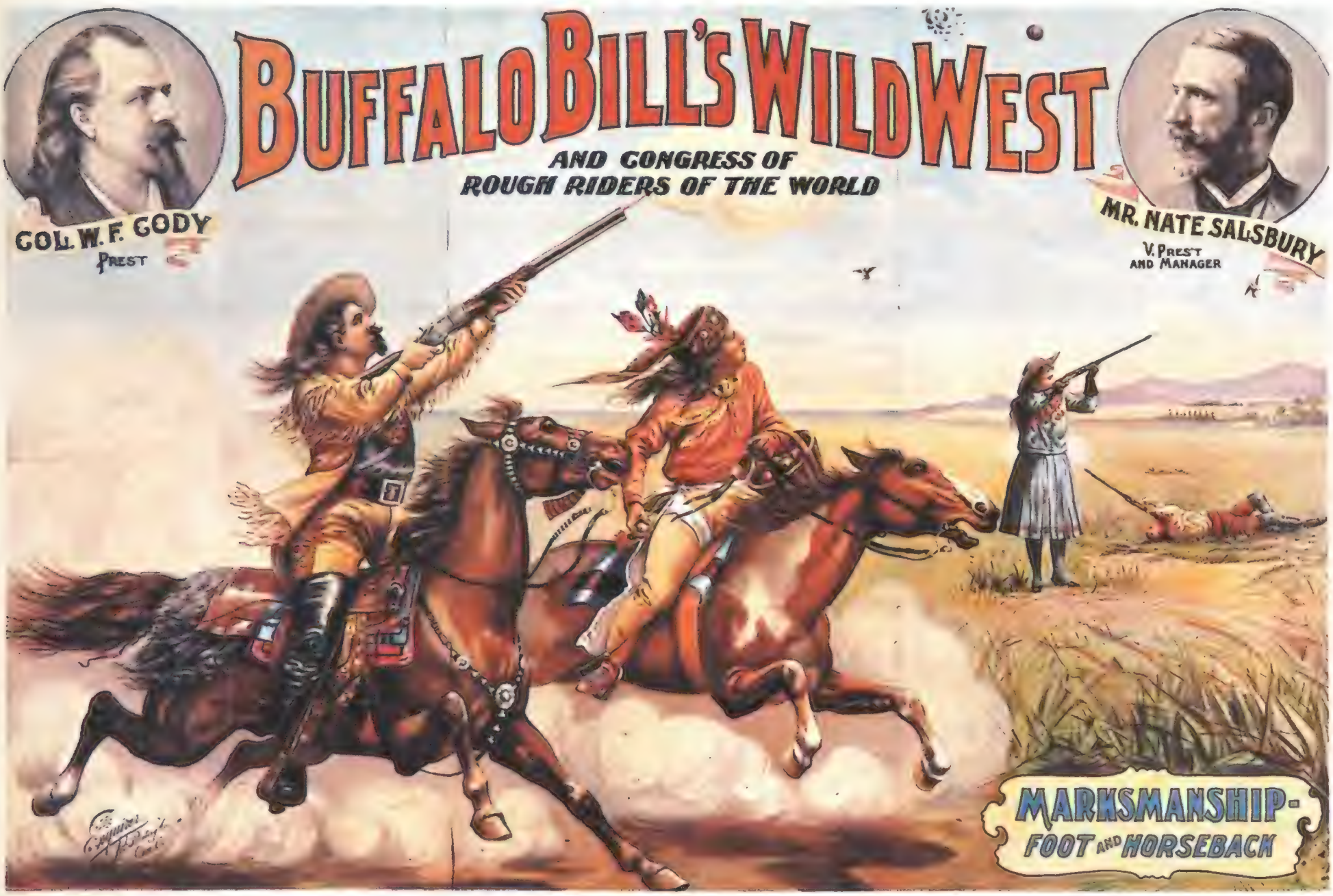
Backed by braves, a buckskinned Bill salutes an evening audience in this Frederic Remington oil.

spondent in a divorce proceeding in 1905; the judge ruled the charge "preposterous.") President Theodore Roosevelt, no slouch himself at the manly arts, was one of Bill's bulliest fans. Cody was often called "the greatest showman the world has ever known."

Circuses and other barnstorming shows flourished during the 1890s, but Buffalo Bill's Western extravaganza, a forerunner of the modern rodeo and movie horse opera, was in a class by itself. Cody, however, was more than a shrewd impresario. "He was America's first media hero," says David H. Katzive, who put the current exhibition together with money from Philip Morris, Inc. and the Seven-Up Company. The irrepressible plainsman became a matinee idol on the stage. He was featured in some 3,000 dime novels and several of his ghostwritten "autobiographies" were best-sellers. In his later years he even directed a series of short films about Indian life and history, which included the Battle of Wounded Knee.

Again and again in the Wild West show, he reenacted (with some improvements) his own youthful exploits. Wherever the show played he was front-page news in the local papers—thanks to his PR man and crony, John M. Burke. He appeared in advertisements for Winchester rifles, Stetsons, Chancellor cigars and Old Crow bourbon. Says Katzive, director of the DeCordova and Dana Museum and Park in Lincoln, Massachusetts: "When it comes to self-promotion, today's showbiz celebrities just aren't in the same league."

Ironically, however, Cody's reputation has suffered in this skeptical age, partly because he was such a master of hype, partly because American attitudes toward buffalo hunters and Indian fighters have lately done an abrupt about-face. In academic circles especially, people either tend to disbelieve what they hear about the old scout's exploits, or to deplore what he was up to. Buffalo Bill the hero, it is charged, was a figment of his press agent's imagination. The intrepid



Hell-for-leather poster presents Bill pulverizing glass balls with a rifle, as he rides at full gallop.

cavalry scout was really a bloody-minded hunter and Indian hater as well as an incompetent businessman, a vain imposter, a drunk and a skirt-chaser. In Robert Altman's controversial 1976 film, *Buffalo Bill and the Indians*, the Native Americans have all the humanity and wisdom. Bill Cody, as played by Paul Newman, is a blustering hypocrite, cynically exploiting the Indians in his show. Novelist and critic Leslie Fiedler, Samuel Clemens Professor of English at the State University of New York, has suggested that Cody, like many of his contemporaries, was an instinctive champion of white supremacy whose views today might be suitable to folks clad in the sheets of the Ku Klux Klan.

Cody biographer Don Russell, and other historians of the Old West, beg to differ. Bill, they insist, is an authentic American hero. His accomplishments were real. "The man and the myth," reflects Paul Fees, curator of the Buffalo Bill Museum at the Historical Center, "were largely one and the same." Without any question, Cody was a skilled rifleman, a superb horseman, a courageous scout and an indefatigable Pony Express rider. He was also very much a man of his times, a rugged individualist fairly brimming over with grit, pluck and, yes, bluster.

In many ways, William Cody was also a complex, not to say contrary, fellow. Just over six feet tall and weighing 200 pounds, he often indulged a boyish appetite for fun and games. He would behave like a prima donna one moment and an easy-going "good ole boy" the next. His sentimental streak was as wide as his outsize belt buckle, yet he also demonstrated an entrepreneur's cold eye and driving ambition.

Chauvinism and pure pigheadedness

Cody was even more contradictory when it came to some of the most important issues of his day. Buffalo Bill, that heralded Indian fighter, could sometimes be an eloquent champion of the Indian's cause. Time and again he insisted: "Every Indian outbreak that I have ever known has resulted from broken promises, and treaties broken by the government." Bill's rocky marriage was largely the result of his traveling habits and pure pigheadedness. For his part, at the divorce hearing, he accused his wife of serving his guests while "wearing a dirty wrapper." Yet this chauvinistic husband was, as an employer, a staunch advocate of women's rights. "If a woman can do the same work that a man can do and do it just as well," he averred, "she should have the same pay." Even more incongruously, William Cody the mighty hunter evolved into a pioneering conservationist who helped rescue from extinction the last few herds of buffalo in the West.

Historically, Cody was a transitional figure who changed with times that were changing with breath-

In action, near the end of his career, the real Bill stirs audience by stampeding buffalo with blank cartridges.

Between performances, the elegant entrepreneur relaxes in tent. Road show netted $1 million a year.

The new, touring Buffalo Bill exhibition

taking speed. He was born three years before the California Gold Rush; he died the year the United States entered World War I. His lifetime encompassed the Civil War, the last pioneer thrust Westward, wagon trains, cattle drives, Indian wars, the building of the great Western railroads and the burgeoning of the region's sprawling new cities. It was a time that saw the perfection of the telegraph, telephone and light bulb, of the automobile, airplane and machine gun. Not to mention Joseph Glidden's barbed wire, an 1874 invention that did as much as anything to close down the Old West for good.

By 1890, with the frontier all but gone, Bill began catering to the Eastern public's instant nostalgia for an Old West they had never known. At the same time, he did his best to get in on the ground floor of the new West, investing heavily in land and mining. "He symbolized the past to millions of people but he really wasn't much interested in it himself," says Fees. "Basically, he was a developer."

His father, a restless farmer and Kansas "free stater," died in 1857, leaving the family penniless. Will, the fourth of eight children, was just a boy, but he soon got a job as a wagon-train messenger with a Western freight company. He was only 11 when he was required to sign an employee pledge: "I agree not to use profane language, not to get drunk, not to gamble, not to treat animals cruelly and not to do anything else that is incompatible with the conduct of a gentleman." Cody never did swear much; he favored such mild expressions as "Thunderation!", "By jiminy!" and "You can bet your boots and socks!" As for the rest of that pledge, he ran with a pretty rough crowd and could hardly have been expected to behave much better than the company he kept.

He hung around frontier cavalry posts with bullwhackers from the wagon train and delighted in showing off his riding, roping and shooting skills. As a Pony Express rider, at age 15, he set the record for the third longest leg in company history—321 miles in less than 22 hours. He was befriended by gunfighter "Wild Bill" Hickok (the two Bills eventually did a stage number together). Cody is supposed to have killed his first Indian during a night raid on a cattle drive in Nebraska.

During the Civil War, he served 19 months with the Seventh Kansas Cavalry. Afterwards he married a pretty, citified St. Louis girl named Louisa Frederici, who, it turned out, disliked show business and hated the West as much as Bill hated staying home. He had an unhappy fling at running a hotel, served briefly as a scout with George Armstrong Custer (well before the Little Big Horn), then went to work as a hunter supplying meat for the Kansas Pacific Railroad. Riding his Indian horse Brigham (half-jokingly named for the Mormon prophet), in eight months he killed more than 4,000 buffalo with a .50-caliber Springfield rifle lethal enough to be called Lucrezia Borgia.

Derring-do with the 'Dandy Fifth'

By 1868, Cody was known throughout the West as Buffalo Bill. General Phil Sheridan took him on as chief of scouts for the Fifth Cavalry, the "Dandy Fifth." The cavalry had been sent out to protect the wagon trains of Westbound emigrants, and Cody's job was important. He served with distinction until 1872, chasing horse thieves, keeping watch on Indian bands and participating in 14 more or less hair-raising engagements. It was not all blood and thunder, though. In later years the resourceful scout liked to tell the story of a solitary ride through Indian territory, when he was outfoxed by his mount, an old Army mule that somehow got away from him when he carelessly dismounted, failing to wrap the reins around his wrist. For miles, sweat pouring down his face, Cody chased after the animal. Finally, he caught up with it. "Now, Mr. Mule, it's *my* turn," he announced, and, raising his rifle to his shoulder, shot the critter dead.

In the summer of 1869, he helped a regiment of troopers in a fight with a band of Cheyennes near Summit Springs, Colorado. As the Fifth swooped down on the Indians, killing 52 of them and rescuing a captive white woman, Cody shot and killed the famous chief Tall Bull. In due course, a reenactment of Cody's exploit in the battle became a dramatic feature in the Wild West show.

After Cody visited New York City for the first time in 1872, his life took a theatrical turn. Journalistic ac-

Mr. Doherty's articles on the bald eagle and the federal duck-stamp contest appeared last year in the May and June issues of SMITHSONIAN.

Soulful Buck Taylor, billed as "King of the Cowboys" in Cody's show, was the hero of many a dime novel.

Sitting Bull briefly joined his friend Cody in 1884 for $50 a week and the right to sell photos of himself.

Native Americans abroad, on *Wild West*'s 1890 tour, braved waters of the Grand Canal in a Venetian canoe.

Ohio farm girl Annie Oakley, who opened the show for 17 years, demonstrates mirror marksmanship.

"Pawnee Bill" (Major Gordon Lillie) served as Indian translator and partner during 1910 "farewell" tour.

With life at stake in 1944 film, Bill (Joel McCrea) is tied up by Chief Yellow Hand (Anthony Quinn).

A courtly Bill (Louis Calhern) bows with Howard Keel and Betty Hutton in film *Annie Get Your Gun*.

counts of his heroic deeds had preceded him and the first of the dime novels written by Ned Buntline, Prentiss Ingraham and at least 18 other scribblers were selling well. Buffalo Bill was lionized by August Belmont, the banker-diplomat, and *New York Herald* editor James Gordon Bennett jr. (SMITHSONIAN, November 1978), but what impressed him most was seeing himself portrayed on the stage. A few months later he took to the boards himself. Playing the lead in a noisy Buntline potboiler called *The Scouts of the Prairie*, he was an instant hit.

For the next decade, Cody worked part of the year as a scout and hunting guide throughout the West. Then, cashing in on his soaring reputation, he played in Western melodramas such as *The Red Right Hand; or, Buffalo Bill's First Scalp for Custer*. The proceeds helped him buy a fancy ranch in North Platte, Nebraska; it was the first of several. There, in the summer of 1882, the townsfolk asked Cody to organize a big Fourth of July celebration. Cody had long entertained the idea of producing a pageant combining dramatizations of his frontier adventures with demonstrations of cowboy skills. The local celebration gave him a chance to try out his idea with a willing cast of hundreds. Called the "Old Glory Blowout," it proved such a success in North Platte that Cody was convinced it would go over big back East. The first performance of *The Wild West* took place in Omaha in May, 1883—100 years ago.

Bill and his astute business partner, Nate Salsbury, needed a while to work the bugs out of the show. On the road, the logistics were horrendous. Three long trains were eventually required to transport 400 horses, plus steers, buffalo, 640 cowboys, Indians, Rough Riders, musicians and technicians. It was hard to keep such an army supplied with food and gunpowder. Horses kept stampeding. Train accidents and bad weather added to the difficulties. But, over the years, the show thrilled 50 million people in a thousand cities and a dozen foreign countries, and it netted as much as a million dollars a season.

Cody's theatrical sense was superb. He knew how to get a crowd on its feet and spared no expense or effort to keep it there. A report in the *Hartford* (Connecticut) *Courant* described a performance: "Thunder of hoofs, clank of spurs, rattle of pistols, glint of shattered glass balls, odor of gunpowder and cattle made it authentic. It began with a pony bareback riding race between Indians and went on to a climax with a grand realistic battle scene depicting the capture, torture and death of a scout by savages; the revenge, recapture of the dead body, and victory of the government scouts. Cowboys rode bucking broncos, roped and tied Texas steers . . . The pony express rider dashed in, changed . . . to a fresh mount and dashed off again. The startling, soul-stirring attack on the Deadwood mail coach ended in a rescue by Buffalo Bill. . . ."

Cody insisted on at least the illusion of authenticity. He never permitted his *Wild West* to be called a "show." It was billed as "the all genuine educational exhibition of the American West." In the program, Sioux Indians might be described as Arapahos or Crows, but their presence underscored the show's claim to be "the real thing." Cody's vaunted Rough

Riders of the World were actual cavalrymen from France, Germany and even Russia. The wagons used to illustrate "a prairie emigrant train crossing the plains" were genuine Conestogas. The mail coach captured by the Indians was billed as "the original old Deadwood stage" built in Concord, New Hampshire, and used for years on the run from Deadwood, South Dakota, to Cheyenne, Wyoming. For a "buffalo hunt" conducted by Cody and the Indians, firing blanks, nothing would do but to have a real herd of the shaggy creatures to pursue.

Cody lived like a king. He wore only the finest clothes. He bought another scenic mountain ranch on the south fork of the Shoshone River and a rustic hunting lodge farther north called Pahaska (for his Indian name, Longhair) Tepee. In the off-season, he caroused with cronies but took time to found his namesake, the town of Cody, where in 1902 he put up a hotel named the Irma, after his youngest daughter.

If those were the best days, they were not altogether carefree. Cody was increasingly estranged from his wife, Lulu, as he called her. She did not like his friends, his drinking, his flashy clothes, or his vagabond ways, and she made her disapproval plain. Cody fretted about her a good deal, and finally tried to get rid of her in 1905. But, after a bitter hearing, the judge refused to grant a divorce.

Bill worried about money, too, for he spent or gave away most of what he earned. Even before Salsbury died in 1902, he was overwhelmed by work and by ill health. "I can't stand so much as I used to," he wrote his sister Julia. "Now as we are getting old we must not kick at our breaking down, it can't be helped, but I don't want to break down until I get out of debt and ahead of the hounds . . . enough to take it easy."

Cody never achieved his goal. Without Salsbury's business genius, he went into a financial spin. Toward the end, he was so overextended that he was unable to borrow a mere $33,000 to keep *The Wild West* afloat. His mining interests and other investments did not pay off either. Even the Irma proved a money loser. Rather than face bankruptcy, Cody assayed several comebacks. Paunchy, wearing a wig and suffering from a variety of painful ailments, he was barely able to sit in the saddle. Somehow, though, he managed to gallop around the arena and shoot glass balls out of the air, albeit with a little trickery—his rifle shells were filled with bird shot. In January 1917, William Cody died in Denver at the home of another sister, May Cody Decker. He was one month short of his 71st birthday. The *Denver Post* attributed his death to kidney failure and nervous collapse, complicated by, of all things, a "moon eclipse." Cody wanted to be buried in Wyoming but Lulu had him interred in Colorado, atop Denver's Lookout Mountain. A gaudy funeral, arranged by a young journalist named Gene Fowler, was attended by 25,000 mourners.

Cody's legend took on new luster after he died, mainly thanks to Hollywood. He had appeared in only ten films, all silent, but over the years the character of Buffalo Bill was to be featured in 35 others. These ranged from John Ford's 1924 classic *The Iron*

Charlton Heston played a swaggering Bill in the 1953 production of *Pony Express.*

As a cruel showman in Robert Altman's version, Paul Newman reenacts killing of an Indian chief.

The new, touring Buffalo Bill exhibition

Horse, and the popular 1950 musical *Annie Get Your Gun*, to a 1970s Italian spoof entitled *Don't Touch the White Woman*. The roster of actors who have played Bill reads like a *Who's Who* of Western stars—among them Tim McCoy, Roy Rogers, Joel McCrea, Richard Arlen and Charlton Heston.

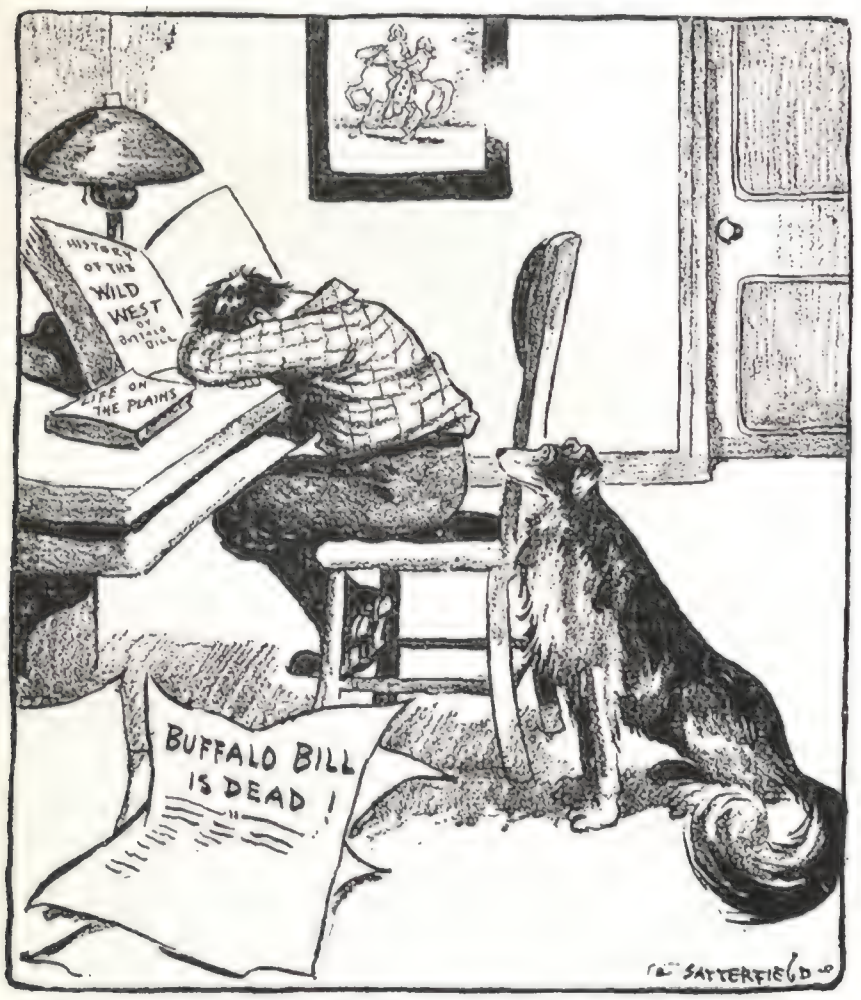
On the screen, Buffalo Bill usually comes off as a simple-minded, sentimental fellow. In William Wellman's *Buffalo Bill*, for example, Joel McCrea appears in the farewell scene riding a white horse and wearing a white hat and buckskins. Speaking to the hushed crowd, he intones, "Now the time has come to say . . . goodbye. Hand in hand, my wife and I are returning to our home in the West . . . to the sunset . . . And so my little comrades up in the gallery and you grownups who used to sit there . . . goodbye. God bless you." Then from far up in the peanut gallery chirps a youngster's shrill voice: "And God bless *you*, too, Buffalo Bill!" Cody would have loved it.

Buffalo Bill lost a fortune gambling on Wyoming's future, yet his visions of prosperity for the region he called home all came true. Today, around Cody, oil wells are pumping and ranches irrigated by water from the Buffalo Bill Reservoir are thriving. Each year, more than three million tourists visit nearby Yellowstone National Park. The town has become a prosperous community of some 7,000 residents who strive mightily to keep their founding father's legend alive. Nothing signifies that commitment more dramatically than the huge equestrian bronze of William Cody, sculpted by Gertrude Vanderbilt Whitney, outside the Buffalo Bill Historical Center which also houses three other separate collections of Western art and artifacts.

As for Cody's other principal landmark, the Irma Hotel, these days it is doing a lively business. Occasionally, Buffalo Bill's grandson, Fred Garlow, stops in for dinner or a cup of coffee. Known locally as "the best hunting guide in northern Wyoming," the chatty 72-year-old can remember slicing up apples for "Grandad" when he was feeling poorly. Another Cody resident, 82-year-old Francis Hayden, used to deliver the newspaper to Buffalo Bill whenever he stayed at the Irma. "He was such a restless man I never knew where I would find him," recalls Hayden, whose father, a surveyor, laid out the town. "Sometimes he was in his office back by the stairway. Sometimes he was out in the bar. Sometimes he was upstairs playing cards. But he always paid me a nickel and he *always* said thanks."

Annie Oakley worked for Cody for 17 years without a contract. She sized him up this way: "He was the kindest, simplest, most loyal man I ever knew."

"What more," Don Russell wonders, "could possibly be asked of a hero?" Hero or not, the old plainsman's charms are hard to resist, as anyone who sees the new show can testify. Like his traveling extravaganza, William Cody was "the real thing." You can bet your boots and socks on it.



Mourning the death of a hero and the Wild West, a boy weeps in a *Boston Record* cartoon, January 15, 1917.

In a theatrical, yet touching, farewell portrait, the old scout doffs his hat and gravely bows his head.

The Ten-Day Refi
People Who Have Fo

The Caribbean sunset spreads across the darkening water like a thousand bougainvillea blossoms floating on the tide.

And suddenly the nine-to-five world you left behind you seems very far behind you indeed.

Ahead of you is another world. The world of Royal Caribbean.

A world of incredible food and tall tropical drinks. Lazy days by the pool. Warm nights under the stars. Fresh fruit in your stateroom.

A world of sugar-white beaches, sapphire seas, and some of the most colorful people on earth.

You'll find waterfalls to climb. Coral reefs to explore. Rain forests where the orchids grow wild and the ferns are thirty feet high.

It can all leave you feeling like a child again. Wide-eyed. Wondering. Gloriously, unselfconsciously free.

Just talk to your travel agent about cruising with Royal Caribbean. Year-round from Miami for seven, eight, ten or fourteen days.

It can create a lot of beautiful new memories for you.

And bring back a lot of old ones.

ROYAL CARIBBEAN

Song of Norway, Song of America, Nordic Prince, Sun Viking
Ships of Norwegian Registry

esher Course For rgotten How To Live.

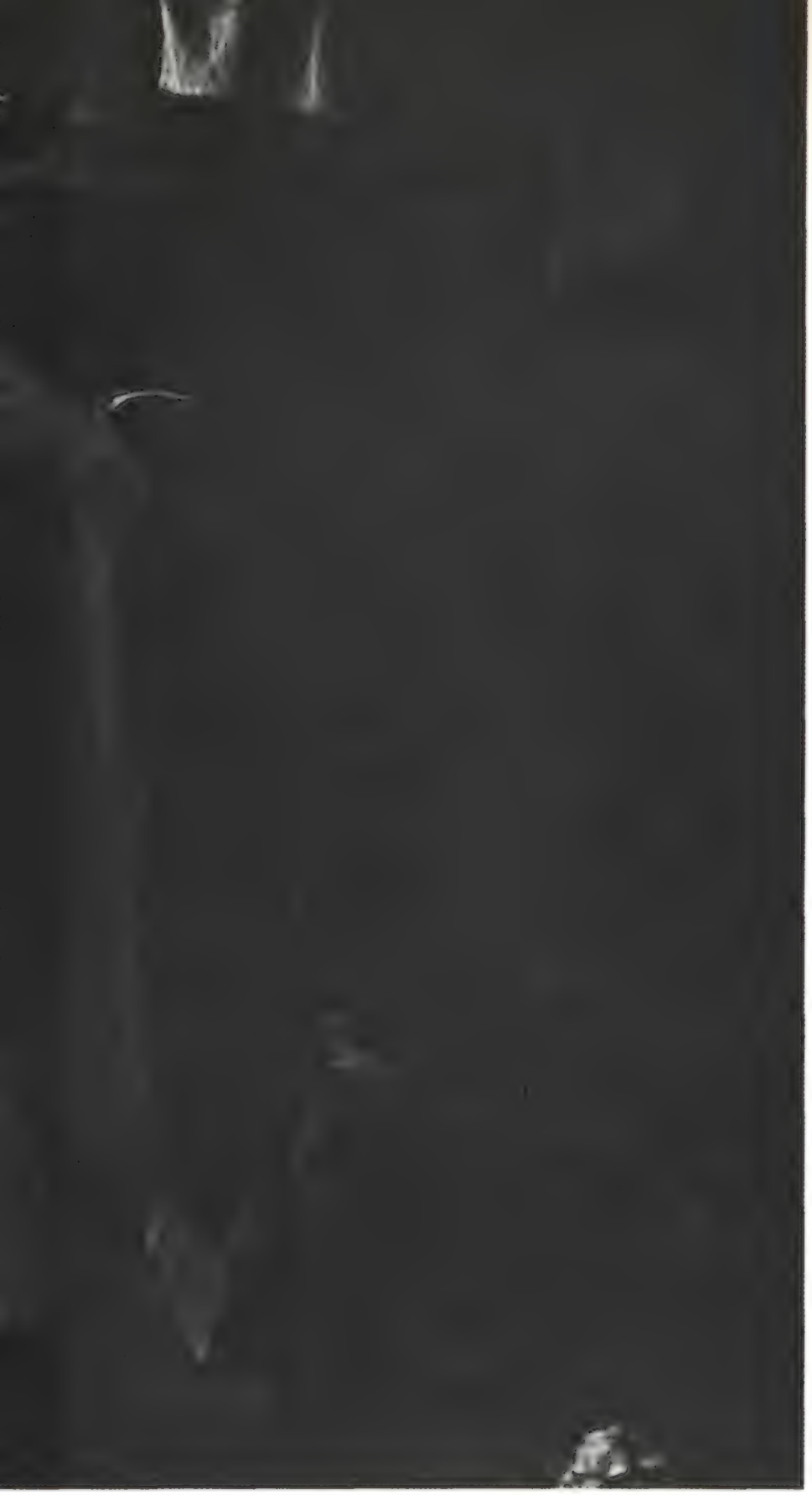
Chin Che Yung has found it difficult to make a living since leaving Hong Kong three years ago.

Now working at a shirtpress in Queens, he earns ten cents a shirt pressing 50 an hour, with a partner.

By J. Tevere MacFadyen

Exploring a past long locked in myth and mystery

The New York Chinatown History Project has launched a cultural rescue mission to save a little-known immigrant heritage



It seems an improbable cultural resource: a dilapidated factory in a dreary New York neighborhood, unidentified by name or number, distinguished from the other decayed factories around it by a geyser of steamy exhaust and a muffled clatter escaping from within. Inside the din is louder but still somehow softened. So is the thin light cast by overhead fluorescent lamps, and the details of everything they illuminate are bathed in a misty haze. The interior of the factory is suffused with fine lint, soft evanescent stuff that clings to every undisturbed surface, hanging still in the air, swirling and eddying in the wake of any movement.

Through this gauzy scrim, long rows of workers appear almost as apparitions, deployed in pairs at groups of odd machines. The machines are steam shirtpresses. Their operators are almost exclusively older Chinese men, and though they would hardly recognize themselves as such, these laundry workers are the cultural resource we've come here for. In their accumulated experience they preserve essential elements of a fast eroding asset: the cultural heritage of Chinese immigrants in America.

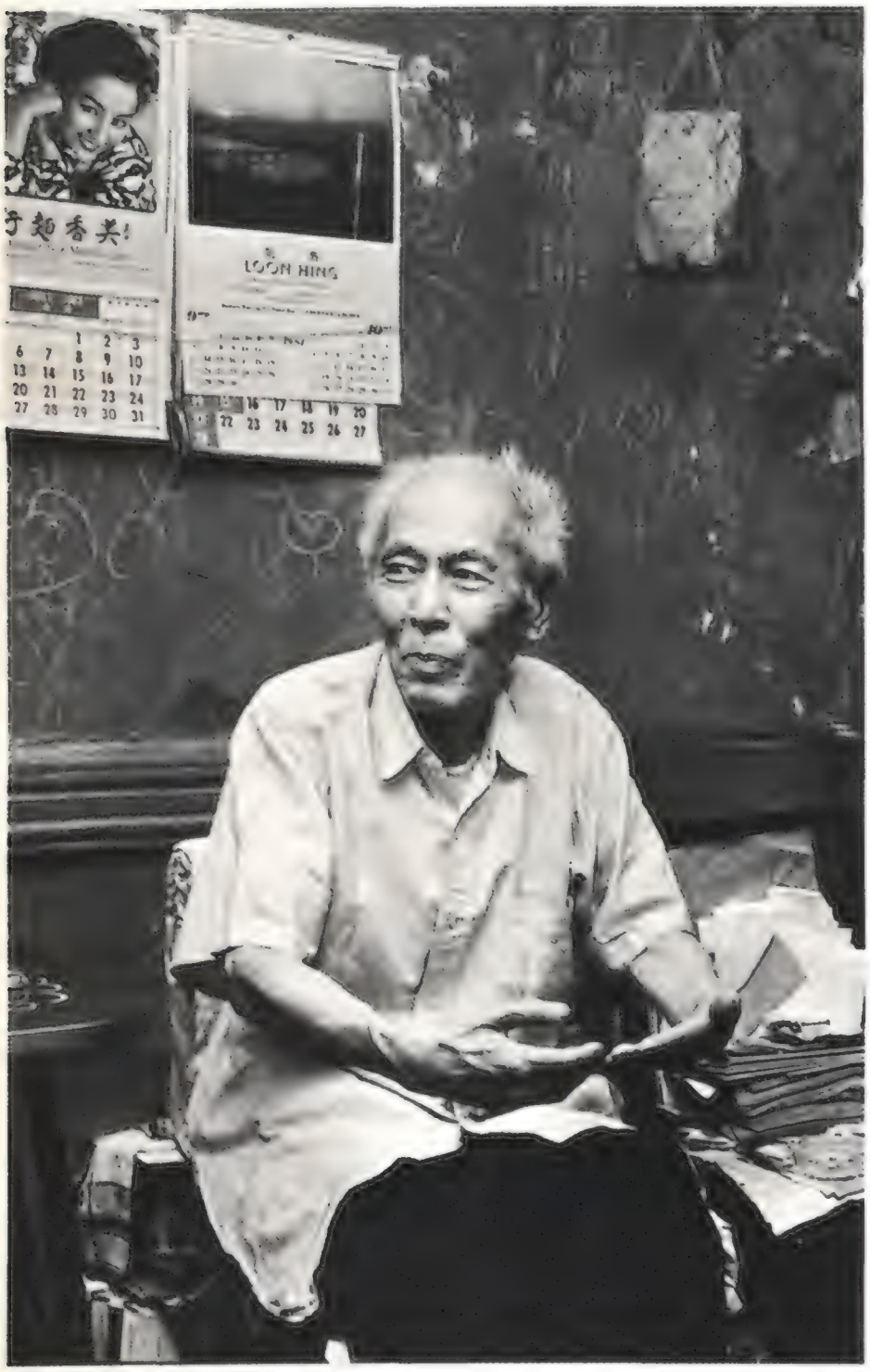
The men move like dancers, athletes practicing Tai chi, rendering great bales of damp, wrinkled shirts crisply smooth with an economy of effort instilled by endless repetition. The process moves incredibly fast. The muted cacophony audible outside is produced by the hiss of countless steam valves and the padded thump of the presses, overlaid with constant conversation and the wails of Chinese pop music from radios.

An interview at the shirtpress

I've come to the shirtpress with Judith Wing-siu Luk, a shy, politely formal young woman who is an oral historian with the New York Chinatown History Project. She is just one of nine young staff members who include seven Chinese-Americans (four of them bilingual) and two photographers from the Midwest. Under a major grant from the National Endowment for the Humanities, they are committed to preserving on tape and in photographs (like those shown on these pages) the rich and varied cultural heritage of the Chinese in America before it is lost forever. I watch Judith move through the room greeting acquaintances, pausing here or there to chat briefly. She has visited here regularly for a year now, and her presence causes no apparent disruption. Some men nod as we pass; others take no notice. She leads me upstairs to meet Mr. Chin, the laundry's cook and the primary reason for our visit today. Like many Chinese who eventually ended up in the United States, Mr. Chin emigrated initially to South America. She has talked enough with the cook to know that his memories of this period can provide fresh insight into a little-known but important aspect of the immigration journey.

In colloquial Cantonese it is common to say, when one is looking for work, that one is looking "for a bite to eat." Workers customarily expect to be fed by their employer, and employees of the shirtpress have transplanted that custom along with others. Mr. Chin prepares meals for two shifts of 160 workers daily. His domain is a poorly lit loft, its walls and ceiling darkened by soot from the gas burners he cooks over. His

Photographs by Paul Calhoun and Robert Glick



Project pamphlet features Sin Jang Leung, a typical "bachelor" laundry worker who has lived here 45 years.

woks and kettles, though similarly blackened, have been scrubbed and fastidiously put away. Mr. Chin tosses a chicken wing to an attendant cat, then welcomes Judith. He insists we eat, proffering bowls of soup and rice. Judith and Mr. Chin converse, salting their Cantonese with English words and phrases.

The cook is a small round man with a ready smile. He grew up in Guangdong Province in southern China. Early in the Second World War he left on a French steamer for Marseilles, where he boarded an Italian boat to South America. For two decades he shuttled back and forth to the United States on short-term visas before entering permanently in 1961.

Judith takes notes—in Chinese—as Mr. Chin reminisces. He recalls at random stories of stormy passages on crowded ships, attempts to gain entry to the United States, and the fabulous parades held in the Chinese quarter of Lima, Peru, for Double Ten, the Nationalist Chinese holiday. After an hour he excuses himself, saying he has to get back to work.

As we walk across East Broadway toward the offices of the New York Chinatown Project, I notice that virtually every establishment we pass is Chinese-owned, though ten years ago this block wasn't even included on maps of Chinatown. Bearded, black-frocked Hasidic publishers still distribute religious books from warehouses, but Chinese has replaced Hebrew on a big storefront under the Manhattan Bridge.

Chinatown's previous tenants

For 300 years after the Dutch drove out the native Manhattan Indians, this cramped wedge of real estate on Manhattan's Lower East Side has been home to successive immigrant groups. A colony of black freedmen occupied the site for most of a century before they were displaced to Greenwich Village, then to Hell's Kitchen and finally to Harlem. After the blacks came the Irish, first a trickle and then a cascade as famine forced them from their homeland. The Irish were in turn eclipsed by Germans, who gave way to East European Jews and southern Italians. The first permanent Chinese resident is said to have arrived about 1840, but the real birth of Chinatown dates from the late 1870s, when thousands of Chinese miners and railroad workers were put out of work in California and began drifting east. Lower Mott and Doyer streets, north of Chatham Square, were soon solidly Chinese.

"Looking at Chinatown strictly as a geographical place is too limiting for me," concedes Jack Tchen, historian and director of the Chinatown History Project. His group is trying to preserve the fragile cultural legacy of this community, which is currently wracked by unbridled expansion. Since the repeal of restrictive immigration laws in 1965, the population

This Chinese-owned store on Catherine Street is in area that was once an ethnic European neighborhood.

of ethnic Chinese in this country has more than doubled. Of nearly one million (if one estimates the high unreported numbers), at least 200,000 now live in New York's Chinatown, making it the largest Chinese community in the United States.

Normalization of relations with mainland China brought an influx of capital from nervous Taiwanese, and from the British and Portuguese colonies of Hong Kong and Macao where leases are due to expire before the end of the century. Land values in Chinatown are now among the highest in the city. Foreign investors increasingly control much of the severely limited housing stock and a good deal of the industry. Garment factories and restaurants have long since swept past the archetypal laundries as the immigrants' principal employers, but wages by and large remain mired well below minimum. And still the newcomers pour in, some 10,000 a year, seduced by the myth of easy prosperity.

Charlie Lai remembers the myth. He remembers anxious months of waiting in Hong Kong, and the chaos of sudden departure. He remembers, too, the incremental dissolution of the myth after he arrived. He was ten years old. Now 27, and co-founder with Jack Tchen of the Chinatown History Project, he recalls: "I grew up in the streets here, but for a long time Chinatown for me was just a place to eat, to stay away from when gangs got rough. I never thought about what Chinatown *was*. On the Chinese New Year we'd buy firecrackers and set them off, but what did that mean? We only thought of this traditional Chinese holiday as entertainment, a day off from school."

Charlie's mother works as a seamstress; his father is a cook. Charlie fulfilled the immigrant's American

J. Tevere MacFadyen, a free-lance writer living in New York, is currently working on a book on the survival of small farms, due next fall from Dutton.

Sit Sau Fong Chiu was permitted to join husband, a laundry worker, after immigration laws were relaxed.

dream with honors in high school and a scholarship to a prestigious university, then he returned to Chinatown. "I've always known it was my home," he says. "I don't fit anywhere else. There's no 'back home' for me in Hong Kong or China. Home is here, in the United States, and more important, in Chinatown."

Chinatown has tended to erase its own history. Originally isolated by race and language from mainstream America, Chinatown was further fractured by protectionist immigration laws, the Chinese Exclusion Acts passed between 1882 and 1924, which effectively prohibited the entry of Chinese laborers or the families of those laborers who were already here.

Until their repeal in 1943, the Exclusion Acts stranded thousands of single men and created a bachelor society, a community that worked to live and lived to work, sending what it could of its earnings home. Severed from their families and the conventional Chinese oral tradition, the bachelors hoarded their experience. They cherished the past and dreamed of the future, nurturing their battered pride with retouched renditions of reality. "There was this legend of the clothing store," Jack Tchen recounts. "Some people in southern China with relatives abroad even today believe that the laundry workers actually work in a clothing store. It's a folk myth. The retired laundrymen went back to China and perpetuated the myth, because they were too prideful to admit that they didn't own a clothing store; they washed other people's dirty clothes." Without children to listen and learn from the stories, the bachelor society evolved into a culture bent on denying itself any historical record. The history of Chinatown went underground, into the folktales and padlocked memories of its old men.

This thread cutter makes his living in one of 600 garment factories in Chinatown

"Now," Tchen says, "the old bachelor society is literally dying away. We hear of seniors who die alone in their apartments, and the police have their belongings because there aren't any relatives." And the new immigrants, intent on their own betterment, lack any real link to their predecessors. "The impression of many, especially the younger ones, is that the bachelors are curiosities," Jack says. "One woman I know grew up believing they were all dirty old men." Further widening the gap are linguistic and cultural

Teresa Tsang is dressed to celebrate organizing of a union of waiters at restaurant where her father works.

differences. While the majority of older immigrants came from the rural south of China, many of the newer emigrés are from the urban north. Their dialects are so different that they are practically unintelligible to one another.

The staff of the Chinatown History Project has embarked on a sort of cultural rescue mission. "We have generations of social amnesiacs with absolutely no idea of what came before," Tchen says. "We're finally realizing that there *is* a history, that there were people who came before us, and that there's a great deal we can learn from them while they're still around."

The auditorium at the New York Chinatown Senior Citizens' Coalition Center is packed with 500 elderly Chinese—not a tenth of them under 60. On the bandstand, members of the Center's Chinese orchestra, sober-looking gentlemen wearing ribbon bow ties, pick out a reedy melody on traditional instruments. The seniors have turned out to honor a 96-year-old couple celebrating their 78th wedding anniversary. Mr. and Mrs. Wong sit beaming and a bit bemused on a dais. Dispersed through the throng, the staff of the Chinatown History Project busily take notes and photographs, awash in their primary source material.

Of all the Project staff members only Charlie actually grew up in New York's Chinatown. The three women—Odette Heung, Judith Luk, Yuet-fung Ho—all come from Hong Kong. Jack Tchen and Jim Dao are American-born Chinese raised in middle-class suburbs. Social documentary photographers Paul Calhoun and Robert Glick are Midwesterners whose last projects took them into the black and Hispanic communities of Milwaukee. Collectively and individually, these nine have begun feeling their way into a society that has survived by excluding outsiders.

Perhaps a third of all the Project's interviews have had to be conducted without benefit of a tape recorder, because the subjects were suspicious of the machine. Immigrants still scared of deportation shy away from cameras. This is history collected from the ground up, painstakingly pried loose and pieced together. There is no blueprint to follow, just a small body of scholarship to consult, and only infinite patience will instill the trust that's crucial to the Project's success.

On stage at the senior center, the Wongs are introduced through crackling feedback to a tumultuous ovation. Their many children and grandchildren stand, bowing as their names are read, and various dignitaries speak. Mr. Wong smiles through it all, looks occasionally startled, and stands to clap whenever the rest of the audience applauds. "He's mostly deaf," Judith tells me. "I've been trying to interview him. I have to holler in his left ear—the right is even worse—but I can't holler in Taishanese."

The Project's founders, Jack Tchen and Charlie Lai, were both swept up in the Asian-American political awakening that occurred on college campuses in the late Sixties and early Seventies. Both embraced activism, but each emerged dubious. "When we first started, one of the questions we constantly asked each other was: Who are we organizing?" Charlie remembers. "What makes us think that something *we* want is right

Columbus Park in Chinatown is where elderly people go to read, visit one another or watch children play.

Lunch break at the shirtpress, where workers are given a free meal daily, is custom transplanted from China.

for the community?" They began to detect in their political work a certain arrogance born of innocence. "I think one frustration we both had," Jack reflects, "was that we felt an enormous potential for our work, but it just wasn't reaching the people we wanted to reach, in Chinatown."

In 1978, while working with Basement Workshop—a seminal Chinatown cultural organization—Jack put together an exhibit recording "the work and culture of the Chinese in America." The show went up in the Chatham Square branch of the New York Public Library, in the heart of Chinatown, and something amazing happened. "We had to be in the library while the exhibit was open, and we'd see seniors climbing three flights of stairs just to look at the exhibit. Some of them brought little flashlights, to look more closely for pictures of mothers or sisters or friends. They'd stand there talking for hours. It started to generate a lot of excitement, and that's when I realized we could use exhibits as an organizing tool to get more history. That really influenced how this Project was finally designed."

The Chinatown History Project, like Chinatown itself, has a talent for survival. A faint smell of woodsmoke permeates the office, lingering on from a fire which began on the floor below, claimed the Project's darkroom and came within a few feet of taking its precious library as well. The office functions, accordingly, as a depot for endangered artifacts, treasures quite frequently discovered by accident. There's a towering stack of bound issues of a Chinatown daily paper, and a collection of wall posters and painted shop signs. "There's a story behind everything here," Charlie says. One afternoon, walking along Mott Street on their way back to the office, Charlie and Jack came upon a loaded dumpster and Jack characteristically couldn't resist the urge to rummage through. He surfaced with a disintegrating leather valise that contained several dozen pairs of ancient straw slippers, still in their wrappers: "Man Hing Cheong. Established 1896. Dealer in all kinds embroidered and straw slippers, cotton quilts, towels and singlets. Etc., etc. Price Moderate."

One Sunday Jack calls me, very excited. A hand laundry is going out of business, he says, and the family that owns it have offered the Project its contents in return for some help with the closing. The Project has been working on an exhibit documenting the laundrymen's lives, called "Eight Pound Livelihood" after the heavy hand irons the men traditionally used. "From a labor or social-history perspective, the evaluation of laundries is absolutely critical to Chinese-American history," Jack told me. "It was, after all, the major occupation of Chinese immigrants." This is his first

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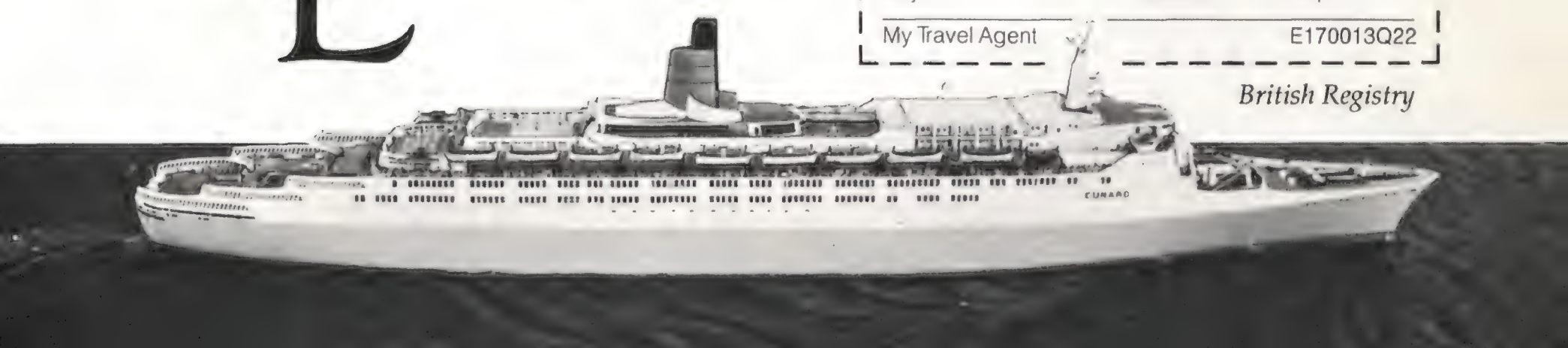


opportunity to obtain actual artifacts—the physical evidence of history.

The laundry is located in one of New York's bleakest neighborhoods. During the drive there Jack tells me that the laundry will close because its owner was shot to death in the doorway. Robbery was not a credible motive, and nobody seems to know why he was killed. The laundry had been his father's before him. With substantial help from his wife, he had kept it operating after the old man's death largely out of filial deference, while he worked night shifts for the postal service. Now it must finally close. His widow will move to the suburbs, to live with her two daughters, a law student and a doctoral candidate in psychology.

Mother and daughters crack open steel security gates to let us in. The laundry is tiny and seems all the smaller for the number of us crowded into it. It feels like one of those mystery ships found adrift, with breakfast coffee poured but nobody left on board. Everything's as they left it: nylon mesh sacks of dirty wash waiting to be sent out, shelves stacked with packages of clean shirts, marked by pink, yellow or green tags, even the date stamp set at the last date the shop took in wash.

We go to work. For the rest of the afternoon we assist the three women in the dismantling of their immediate past. The mother searches in vain for a bag of her daughters' baby teeth she'd saved and hidden away. Like a lot of immigrants, this laundryman could not quite bring himself to trust the banks, and from secret caches throughout the store the mother extracts rolls of coins, hundreds of them, so many that the sack they fill is too heavy to lift. The laundry's cupboards are packed with food put by against emergencies. I open a galvanized tin-covered washtub and find it full of ten-pound bags of rice. Each new discovery prompts a story from mother or daughters, an anecdote or memory often touching, often funny, and the sense of loss seems most poignant when the room rings with their clear laughter. As we are leaving, making arrangements to return the following week, Jack absent-mindedly hefts one of the irons. "Eight pounds," he says, half to himself. "Yes," the mother brightly replies. "Eight pounds, yes."

A few months ago I went to a celebration for the Chinatown History Project. After two years, they commemorated the occasion with a slide show, a documentary photographic display, as well as the continuing "Eight Pound Livelihood" exhibit. The project offices were filled with the people whose familiar faces and voices had been photographed and recorded.

An obviously pleased Jack Tchen observed: "Here I am with a college education, a skilled professional, but I am a babe in the woods in the world of the so-called unskilled laundry workers. Certainly some have had sad, unfortunate lives but many more have managed to eke out a living and build a community. The laundry owner killed in the Bronx was an amateur photographer and inventor. Others I've met are part-time musicians, botanists, storytellers, carpenters and politicians. Just imagine the contributions they could have made if their life's options had not been so harshly limited. Many people think of history as a luxury; I think of it as a necessity. If the Project can help rescue the history of past generations for the future, then we have become a vital link in the preservation of a heritage."

This year the Project staff is using an NEH grant to produce radio docudramas and plan Chinatown tours.

Tony Tung immigrated from Hong Kong, but he now appears to be at home in New York.

RAMONES

By Daniel Jack Chasan

Alaskan glacier may be starting awesome retreat

Out of 52 that once filled their fjords, only the Columbia remains. It offers the first chance since 1900 to see the beginning of the end

The Alaskan sun is shining on the sheer face of Columbia Glacier, a four-mile-wide river of ice that flows from the snow-packed Chugach mountain peaks behind it to the salt water of Prince William Sound. The seaward end of the glacier is a mass of crenellations, a forest of Gothic spires, the rock formations of the Southwest carved in ice, gleaming a pale turquoise blue. Perhaps halfway up the face, 150 feet above the water, sunlight pierces a thin window in a vertical ridge, making it glow a deeper, purer blue, like a piece of hand-blown glass held up to the light.

Suddenly, a tower of ice to the east of it gives way and topples into the water, then another and another, the great shards dropping 200, 300 feet, the last of them coming down through a rising plume of spray. The spray rises past the window of deep blue, rises almost to the top of the ice. Then it subsides, and in its place, in an upwelling of darker spray, emerges a great, vertical, almost black-blue berg. If the glacier face is pale turquoise, this is dark lapis, and it heads steadily skyward like a breaching whale. It comes up and up until its tip is level with the glowing window, then slowly sinks down again, lists to the horizontal, and drifts out into the brash (floating ice).

There aren't any crows on this dramatic, mountainous coast, but as the raven or eagle or Cessna flies, Columbia Glacier is less than 25 miles from the oil port of Valdez. Forty-two miles long, it is the only one of 52 Alaskan tidewater glaciers that fills almost the entire length of its fjord. The fjords along the Alaskan coast were all carved by ice, but the glaciers that carved them have long since retreated; most of those that remain lie near the heads of the fjords.

Columbia, in contrast, completely fills its furrow in the coast. It is the last of its kind in Alaska, perhaps the last for hundreds of years to come. If it retreats inland, it will leave a new fjord about 25 miles long. Right now, it seems on the verge of starting to do just that. Columbia is "calving" so much ice during the summer and fall that it is receding during these times at a rate of more than 13 feet a day. And that seems to be accelerating. In 1981, it lost about a third of a mile of ice. By 1984, it may be losing two and a half miles a year.

About two million years have passed since the beginning of the Pleistocene Epoch, during which glaciers covered much of the northern half of the continent numerous times, and roughly 10,000 years have passed since the last Ice Age ended in Alaska. No one is certain exactly when Alaska's surviving tidewater glaciers were formed, and no one knows how often each of them has advanced and retreated in the intervening millennia. All of the major ones have done at least once what Columbia Glacier appears ready to do now, the first of them more than a thousand years ago and the last of them around the turn of the century. This will be the first drastic retreat to begin since then, and the first one ever that scientists can observe and study in depth.

More than academic interest

Since most tidewater glaciers follow the same physical laws, Columbia Glacier will help glaciologists understand the others. It will provide insight into a process that has exposed the fjords of the world. Its collapse may be some kind of a model for the possible retreat of the West Antarctic ice sheet, which rests on the seafloor, its seaward edge supported by floating ice shelves.

One of the scientists studying the Columbia is the senior glaciologist in the U.S. Geological Survey, Mark F. Meier (p. 85). Meier, who works out of the Survey office in Tacoma, Washington, believes that the glacier probably has receded past the point of no return. He also believes that its retreat may have much more than academic interest. He has seen 100,000-ton icebergs created by the glacier, and has personally tagged and measured a couple of dozen that he has estimated at up to 50,000 tons. (Icebergs extending 100 feet and deeper

In a splash dwarfed only by its 250-foot-high face, Columbia Glacier gives up some ice to the sea.

Photographs by James Peter Stuart

In 1974 the terminus of Columbia Glacier rested on Heather Island (foreground), has since receded a mile.

usually cannot get over the moraine, the ridge of rock and gravel that the glacier had bulldozed before it down the fjord and out into the bay. The larger icebergs are trapped until they break up or melt down to a more mobile size.) Most of the icebergs created by the glacier drift out of Columbia Bay, turn west, and are soon out of sight and out of mind. Some, however, turn east, and are soon in the tanker lanes leading to and from Valdez.

No one knows exactly what would happen if a tanker hit an iceberg out there, and no one is eager to find out. Meier says that in the mid-1970s, before the Valdez terminal of the Trans-Alaska Pipeline was in operation, he gave presentations to warn about the increased possibility of ice hazards. The frequent response, he says, was that "they would say, 'Thank you, Dr. Meier,' and dismiss me." Then, in the summer of 1981, the glacier started calving more rapidly, and enough ice appeared in the shipping lanes so that tankers were delayed more often. When Meier arrived in Valdez at the end of the summer, "they welcomed me with open arms." Actually, while the oil companies and the Coast Guard are well aware of the ice out there and give every sign of taking it seriously, no one seems terribly worried. The Coast Guard traffic-control center in Valdez does keep a log in which someone writes down every report of floating ice, and the Coast Guard relays those reports from one vessel to another.

Entries in the ice log are short and dry, but they suggest that the ice is not a figment of anyone's imagination. The fishing vessel *Ricky* reports ice "one story high and the size of a two-bedroom house." An Alaska state ferry and a tanker report chunks "ranging in size . . . to 15-foot-high and 50-foot-long ones." The ferry reports "southbound traffic lane blocked by ice." The tanker "is maneuvering to avoid ice."

Whether or not the floating ice ever becomes a serious navigational problem, the USGS was certainly right to predict it would be there. How did Meier and his colleagues know that Columbia Glacier would start dropping more ice into the water? Meier explains that in the early 1970s, the tip of the glacier was resting on a moraine. It seemed likely, though, that in a period of low ice flow the glacier would retreat from the moraine. When that happened, the depth of the water against its tip could change from 70 to 700 feet. It so happens that the rate of calving appears to be proportional to the depth of the water.

Last summer the glacier looked like this. Large blocks of ice have been stranded on the moraine.

As soon as the glacier was off the moraine, the rate of calving would increase dramatically, and the glacier would not be able to recover.

A Survey glaciologist named Austin Post (p. 85) intuitively grasped the relationship between calving and water depth by studying the behavior of numerous tidewater glaciers. Post has officially retired from the USGS, but still works for it part-time, and could be found near the glacier last summer on the research vessel *Growler*, a 40-foot converted Navy launch with steel around its fiberglass bow for protection from floating ice. Or on foot.

There is Post in rubber boots, striding across the tidal mud of Heather Island, just across the icy water from the glacier face. He carries a camera bag slung over one shoulder and a battered wooden sextant case in one hand. The sextant is his own; it's a Tamaya, made in Japan, and he bought it as a young sailor in China at the end of World War II. The glacier looms over the ice-choked water to his right, gleaming blue in the morning light, but he doesn't give it a glance. He's in a hurry. He wants to reach an observation point on Heather in time to measure a couple of points on the glacier before they break off. The ice has been breaking off rapidly, so he feels pressed, climbing rapidly to an orange-wrapped vertical pipe where he takes out his sextant and sets to work.

Heather Island is green with spruce and underbrush, a little hemlock, a variety of low plants that grow from the muskeg and among the rocks. The end closest to the glacier is all damp sand and loose rock. On the beach, like so much driftwood, lie slowly melting chunks of glacial ice. More ice floats in the water offshore; when the glacier calves, huge pieces cascading down into a fountain of spray, the first waves spread quickly through the offshore ice, and the floating pieces click against each other like a forest of bamboo wind chimes.

That mound of rocks on the northern end of Heather Island is the glacier's moraine. When Post and other USGS staff began studying Columbia Glacier a bit closer, in 1973, the end of the glacier rested there. In late December of 1978, it broke away from the island. By now, it is a mile away.

Daniel Jack Chasan, a columnist for Pacific Northwest *magazine, is a frequent contributor. His article on free-lance astronomers appeared in the July 1981 issue.*

In aerial view last summer, meltwater ponds dot lower part of glacier. Fresh water flows underneath, too.

Fishermen climb an iceberg in front of terminus. They could be hit by falling ice, or the berg could capsize.

Standing in the pilot house of the *Growler,* looking out at the open water between Heather Island and a deep embayment in the glacier, Post says that is probably the deepest the embayment has been since at least the 19th century. He would guess that that portion of the glacier did not rest on Heather Island in the 18th century, and a chart from Captain George Vancouver's voyages of exploration in the 1790s indeed shows the island as a separate entity with open water all around. Post reaches to the pilot house bookshelf, pulls out a photocopied edition of Vancouver's journals, finds the chart. There is Heather Island, sitting out there by itself. There is no sign of the glacier—which has less to do with climatic conditions of the late 18th century than with Vancouver's perceptions. Post, who has collected photocopies or old typeset copies not only of Vancouver's maps but also those of Cook, Kotzebue, La Pérouse and other explorers, thinks the captain did a splendid job of mapping, a wretched job of comprehending the nature of glaciers.

Post had used aerial photography to observe the upstream portions of glaciers, not just the termini. He found, among other things, that when glaciers "surge" forward, it isn't because of avalanching ice and snow. He also noticed some things about calving glaciers.

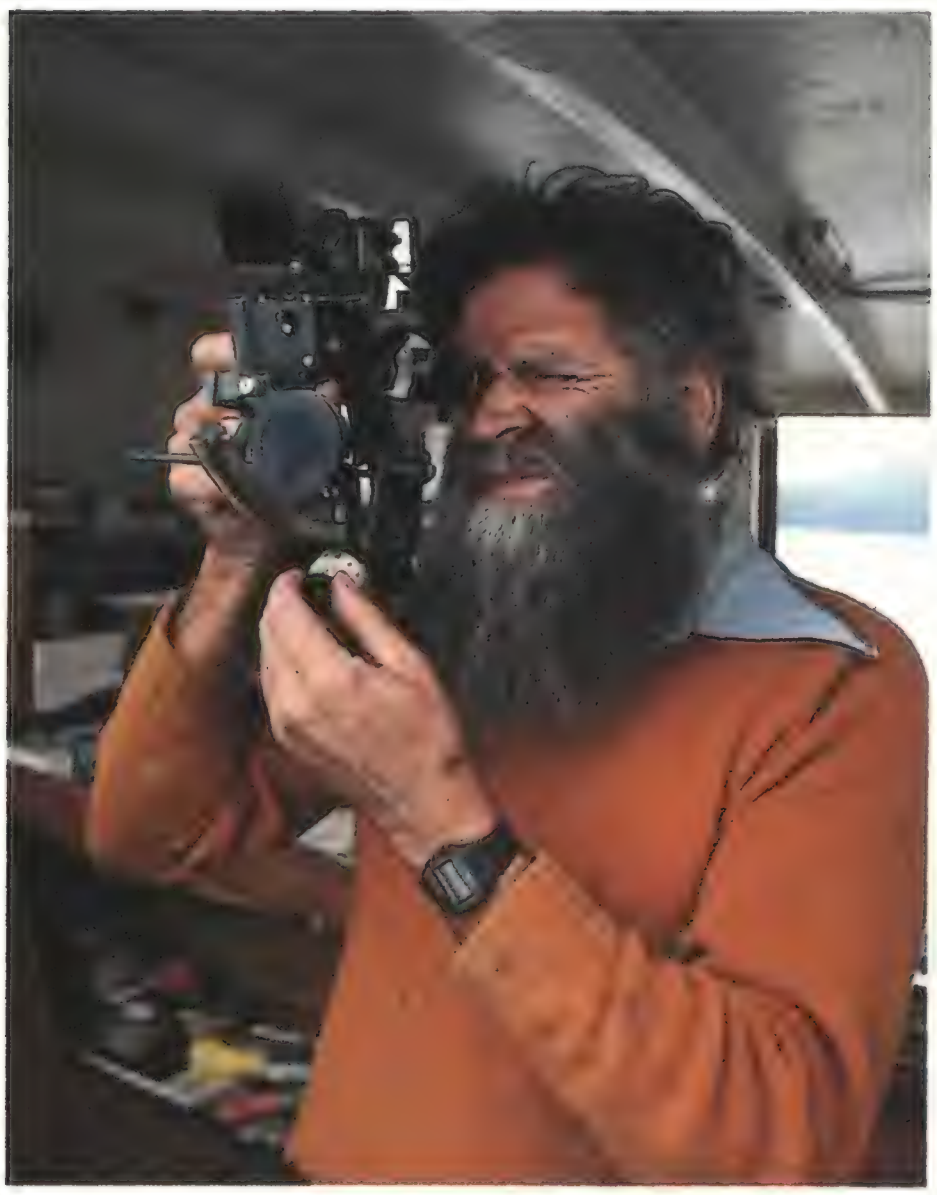
The tidewater glaciers that were discharging the most ice were also putting out the largest icebergs. Big icebergs need a lot of water to float in; the glaciers calving the most ice were also the ones that ended in the deepest water. Post deduced that there must be a connection between the depth of the water and the rate of calving. Columbia Glacier was a key. Here was a big tidewater glacier that was producing relatively small icebergs and relatively little ice. If Post's idea was correct, the glacier should end in shallow water. Yet, soundings near its terminus suggested 600 feet.

Soundings provide vindication

Post wasn't convinced. Those deep soundings hadn't been taken right at the glacier's face, where the moraine shoal, if one existed, would have to be. The first thing Post and other USGS personnel did in 1973-74 was to take soundings close to the glacier face. It turned out that the water was just as shallow as Post had thought—and that there was the potential for a drastic retreat.

The next step was to mobilize a field experiment and take various measurements, including the thickness of the ice upstream. To do that, the USGS took surveys with monopulse radar that bounced signals off the bedrock below the ice. The radar and subsequent computer analysis showed that the ice was very thick (ten miles above the glacier's terminus, there are 1,700 feet of ice above sea level and 1,300 feet below).

Wall of ice about 250 feet above waterline towers over research vessel *Growler*, named for type of iceberg.



Mark F. Meier, chief glaciologist for U.S. Geological Survey, checks plot of retreating terminus positions.

Officially retired but still going strong, Austin Post uses his sextant to measure the height of ice cliff.

It seemed that Post's idea was correct. Presumably, all the tidewater glaciers that have been stable for any length of time have rested on moraines or at least in shallow water. No one knows why Columbia Glacier has apparently clung to its moraine so much longer than any of the others. As Meier puts it, "Someone had to be last."

Post and USGS staff have been studying Columbia Glacier ever since. They have seen it back away from Heather Island, back away from all but a thousand or so feet on the crest of its underwater moraine. When its entire terminus is lying in deep water, it is believed, nothing will halt its rapid "collapse." Post and Meier both expect that to start happening within about a year. Lawrence R. Mayo and Dennis C. Trabant of the USGS's Fairbanks office, who have been studying the upper portions of the glacier from helicopters, aren't entirely sure. Among other things, they say there is a huge reservoir of ice farther up, and even if the glacier backs off its moraine entirely, the surplus ice may flow down and keep it replenished. "We've had a lot of arguments with the Fairbanks people" over that, Post says. He concedes the ice reservoir is there, but feels it probably won't come riding over the hill in time to save the glacier from collapse. But the only real question, it seems, is when, not whether.

Not that Post or anyone else claims to know exactly how the glacier works. No one can fully explain its normal variations in length or the waxing and waning of various sections of its face. Even the "law" that correlates calving with water depth isn't absolute. It works only if you look at the whole face of the glacier and average its behavior over the course of a whole year. It tells nothing about any single point on the glacier's face. The calving at a single point might be described by another "law" that says calving is inversely proportional to the square of the height of the unsupported ice and proportional to the square root of the flow of fresh water under the ice. (All Alaska's tidewater glaciers have freshwater rivers flowing under them. If Post or Meier speaks of the Columbia River, he doesn't necessarily mean the one that flows over Grand Coulee Dam.)

Nor has anyone been able to predict from day to day what Columbia Glacier will do next. Standing on the rocks of Heather Island, the rotor of his research helicopter thundering behind him, Trabant says, "You never know what it's going to do. You come back and wonder what it will have done since last time. That's part of the allure."

There is Post climbing out of a dory on the lichen-encrusted rocks just west of the glacier, looping the dory's long rope around boulders set safely back from the water. The footing on the rocks is tricky, but he scrambles to a high point carrying a hammer, two strips of wood and a piece of waterproof orange cloth. On the high point stands one of the USGS's surveying marks, a vertical pipe wrapped with orange cloth that has faded almost into invisibility. Post tacks his new orange cloth to the two strips of wood, then lashes them with copper wire to the upright pipe, creating a kind of square sail that will be visible from miles away.

From these rocks, one can see the western spires of the glacier, including the part that still rests on the crest of the moraine. The glacier isn't calving now, but no one ever trusts the calm. Even when no ice is falling, people don't take boats closer than a quarter of a mile. When Post wants to take soundings at the glacier face, he uses a radio-controlled skiff. Today, as on most other days, such prudence makes sense: soon, to the east, great chunks of ice will cascade slowly down the face, then a whole tower will fall, sending up a fountain of spray that looks like the grand finale of a fireworks display on the Fourth of July.

This particular vantage point, Post says, "was one of G. K. Gilbert's photostations in 1899." He explains that Gilbert, a USGS geologist who came to Alaska with the turn-of-the-century Harriman expedition, was the first scientist to study Columbia Glacier. A whole series of people has looked at the glacier since then. In the 1930s, most of the work was done by William O. Field. Field "still comes to Alaska," Post says. "He hasn't come back to Columbia, though. That kind of hurts my feelings. It was a favorite of his. And it's the last."

Field, in fact, does hope to return to Columbia Glacier. For those who care, it is special.

A deep embayment (opposite) formed as glacier broke up unevenly in summer. Points later collapsed.

By Susan Hornik

In Poland a poster is a fiery art and a way to speak out

The Solidarity emblem, known worldwide, grew from a traditional expressive form—but one now subject to control by the Party

In Warsaw, in days when it could be flown, the now-famous Solidarity symbol was paraded proudly.

The Polish trade union Solidarity was born in August 1980 amid the waving of workers' banners and religious icons. For almost a year and a half its posters blanketed walls, kiosks and factory fences. Calls for "Strike!" and "On your knees!" were aimed at government officials, who watched and waited for the right time to strike back. In the process the white poster with the blood-red letters *Solidarnosc* (Solidarity) smeared across it became famous in its own right. It carried a new message, and a political one, but was also heir to a rich Polish poster tradition.

In Poland posters are both fine art and decorative fad. Galleries hang them alongside watercolors, oils and more traditional graphics. But their designers are not just respected artists who sign each piece; they are celebrities whose works are avidly discussed, collected and swapped. Poland holds citywide, national and international poster contests and has sent exhibits to such different locales as Paris, Moscow and Mexico City. (The Smithsonian Institution Traveling Exhibition Service sponsored a two-year American tour of Polish posters beginning in 1978.)

In 1968 a poster museum was founded outside Warsaw. Posters in Poland are personal statements on cultural topics—stage and screen, the circus, art shows and jazz festivals. In recent years they have become increasingly idiosyncratic and disparate, a "paper tower of Babel" according to one critic. But Solidarity sent an energizing jolt through the artistic world as well as through the rest of Polish society.

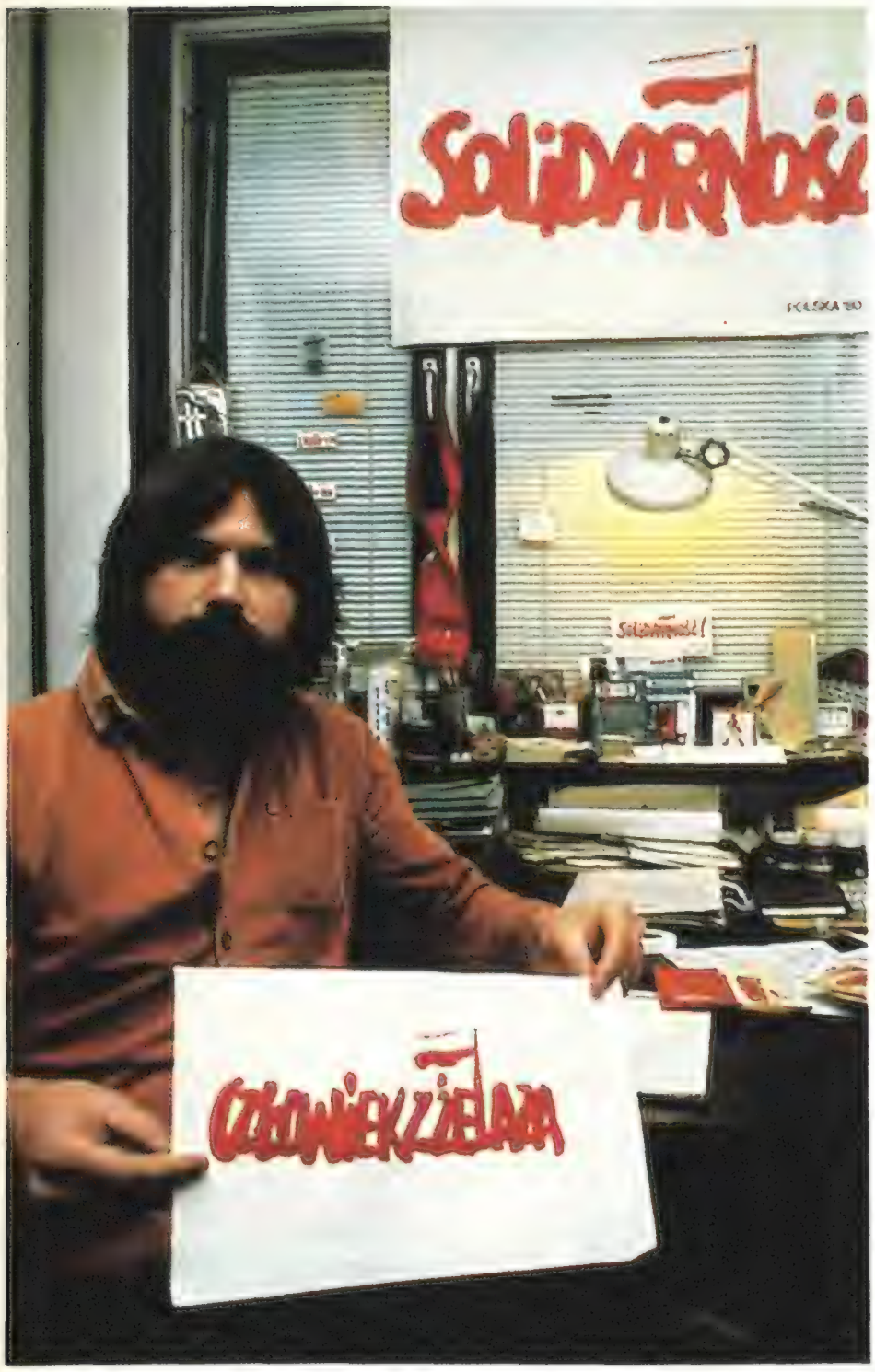
The unassuming artist behind the now famous *Solidarnosc* logo is a young Gdansk designer, Jerzy Janiszewski (p. 90). He rearranged the white and red of Poland's flag in a symbolic gesture aimed at unifying a society of workers, intellectuals and farmers. It was a large idea conveyed with striking simplicity. Although a trained artist and an established poster maker, he dashed off his best-known work while caught up in the fervor of events surrounding him.

Unlike Janiszewski, the designers of most of the best Solidarity posters were enthusiastic amateurs. Szymon Bojko, the Polish art historian and poster authority, notes: "It was like the first period of the Russian Revolution. It was a spontaneous, naive explosion." What Solidarity posters lacked in esthetic quality, they made up for in raw strength. Emotionally loaded symbols were repeated over and over: a handshake, "V" for victory, the muscular arm of a farmer, clenched fists, anchors, crosses and milestone years in Polish history. The symbols reappeared on banners and buttons, T-shirts and beach hats.

Not to be outdone, the government struck back and brief poster wars flared sporadically. The toddler who commemorated Solidarity's first birthday reappeared in an official government version, holding a flaming

Tadeusz Trepkowski's dramatically direct poster, *Nie!* (No!), was done for Peace Congress, Vienna, 1952.

NIE!



Creator of Solidarity symbol, Jerzy Janiszewski, with design for film about Polish workers, *Man of Iron*.

stick. A banner across one corner warned: Don't play with fire! (opposite).

In 1981 Solidarity planned to print a poster commemorating Poland's independence on November 11, 1918. The poster was dominated by the number 1918, the "18" of which is actually a mirror image of 81, because in 1981 the event was officially celebrated for the first time in more than 40 years. The young designer says, "I meant it as the symbol of our second independence." As it turned out, the work of another young Polish artist would have been more appropriate. In 1980 Jan Sawka's "Car of the Year" won a first prize at the Eighth International Poster Biennale in Warsaw. It showed a steely blue tank rumbling down a biliously green city street. On December 13, 1981, tanks and armored personnel carriers rolled across Poland in a physical show of the force behind martial law. Militia ripped banners off gates and scraped away or whitewashed Solidarity posters and graffiti. Posters thrown up in defiance were torn down again and again. Within two weeks the word Solidarity was erased from kiosks and the gray walls of factories. Its symbols were obliterated, but not forgotten.

People often say that events in Poland are cyclical, and certainly the same can be said for its posters. Although almost always identified with cultural themes, modern Polish posters were born in a spontaneous flush of postwar exuberance aimed at rebuilding the devastated country. In decline by the Seventies, they once more burst to life in the *odnowa* (renewal) ushered in by Solidarity. Now, pessimists predict, the trauma of martial law may have dealt the movement its death blow. "I have a feeling," says art historian Bojko, "that I'm walking on graves."

Posters from art to politics

The "Polish School of Posters" flowered after the Second World War, but the poster movement is well rooted in the Polish past. In Poland posters originated in the studios of late-19th-century artists, so they were close to painting and consequently enriched by a steady stream of progressive art movements, from Jugendstil to Cubism and Constructivism.

At the end of World War II, Poland lay in ruins. During the six years of Nazi occupation six million Poles had been killed, an estimated 38 percent of the country's wealth destroyed, and many towns, including Warsaw, had become heaps of rubble. The new Communist authorities wanted to drum home their brand of politics and to whip up enthusiasm for new economic goals: "Electricity + Leninism = Modernization." With no television, few radios and a shortage of newspapers, they recognized the importance of posters as an immediate form of communication. Artists

Modern poster combines "Solidarity" with a 19th-century painting of a proponent of independence.

Official answer to Solidarity was poster: "Don't Play with Fire!"

took advantage of the new state-supported system and began to explore the possibilities of the poster.

One artist recalls the enthusiasm of those days when Warsaw looked like a vast construction site: "There were fences everywhere, just waiting for us to cover them with posters." A great compression of composition took place; decorative elements were discarded and the language of posters greatly simplified. Henryk Tomaszewski and Tadeusz Trepkowski dominated the era. Trepkowski, the father of the postwar political poster, died in 1954. His 1952 anti-war poster is a classic (p. 89): a bombed-out building inside the silhouette of a descending bomb and the single word *Nie!* (No!). Although the propaganda value of posters was recognized, posters were officially viewed with "a certain disdain, as not real art," recalls one designer, so people were freer to experiment. The big boost came when some enterprising artists convinced the woman who selected the art used to advertise Polish films to allow them considerable artistic leeway in their designs. The posters that evolved are unlike most movie posters, for a scene is rarely shown. Rather, the artist tries to capture the essence of the film or use a visual metaphor to sum up his impression of it. This trend caught on and spread to other fields.

Posters became an outlet for individual artistic expression. By the mid-Fifties, artists were increasingly preoccupied with establishing their own artistic identities, developing their own styles and expressing their own visions. Critics regard the mid-Fifties through the early Seventies as the golden age of Polish posters.

As the Cold War ebbed, there was an influx of such Western trends as Surrealism, neo-Art Nouveau and Pop Art. Artists began experimenting with photographic techniques, collage, and knowledge gained from studies in optics. Rather than a coherent movement, it was a wildly diverse scene of painters and graphic designers working in their own ways. Some, such as Jozef Mroszczac, experimented constantly. His early simplicity gave way to an almost Day-Glo surrealism, frilly collages and a preoccupation with three-dimensionality. Others, like Jan Lenica with his swirling neo-Art Nouveau designs, found a unique voice early on. Maciej Urbaniec continued to paint mixed images: Mona Lisa as an acrobat and Boris Godunov wearing a crown of onion domes in flames.

Like all things Polish, posters are as fiercely individualistic as the personalities involved. Three poster makers who began working in the mid-Fifties at the start of the boom give a taste of the variety. Waldemar Swierzy is a poster maker par excellence, Franciszek Starowieyski a painter and Hubert Hilscher a graphic designer. Although Swierzy has also designed many book covers, posters are his métier. Surrounded by oils, icons and books in his rustic loft in Warsaw's reconstructed Old Town, he is philosophical about the special circumstances that enabled Polish posters to reach such heights. "After all," he jokes, "in a way posters are an archaic 19th-century art form, designed for strollers." Poland's very backwardness, few cars

Susan Hornik, formerly a SMITHSONIAN *assistant editor, lives in Vienna and has made frequent trips to Poland to study its art and cultural life.*

Jan Lenica's 1968 poster, with traces of Art Nouveau influence, was for production of Verdi's *Otello*.

Strong folk tradition shows up in Jan Sawka poster, done for Cepelia, Polish government crafts agency.

or superhighways, offered the slower pace needed to look and read. Swierzy has designed posters in almost every category: folksy travel vignettes and warnings not to play with matches. He has done a stately Othello, racing skiers, huge panting lips, chunky circus elephants and a dashing, slightly menacing gypsy (see cover). He uses symbols, metaphors and visual puns. His wry sense of humor is rarely far from the surface.

Swierzy's output is prodigious: he has more than 1,000 posters to his credit. His worldwide reputation brings in commissions from abroad and he has won awards in Paris, Milan and Lahti, Finland (site of a biennial poster competition), to mention only a few. His poster for Andrzej Wajda's *Promised Land*—a shadowy, top-hatted man wearing a broadly brushed white scarf that leaps out at the viewer—won the *Hollywood Reporter* award in 1975 for the best foreign film poster. But he is vague about his prizes and says the real test is the one "in the streets."

The prolific Swierzy is one of the few able to support himself solely by posters. Most of his colleagues also double as cartoonists, painters, set designers, typographers or architects. One of the painters, who also dabbles in scenery design, is the now middle-aged enfant terrible of Polish posters, Franciszek Starowieyski. He does theater and film posters almost exclusively, and they have proved an ideal forum for expressing his bizarre, idiosyncratic world view. Gone is his headband; his long black hair has been shorn; and his posters, once shocking, have been so imitated by younger artists that they are now almost the norm. But he still cultivates outrageousness. He calls the late Senator Joseph McCarthy "an American hero," did not support Solidarity ("Communism with a more humane face"), and once reputedly dubbed Warsaw's "Stalinist Gothic" Palace of Culture the most beautiful building in the city.

But there is another side. He is an unabashed elitist in the middle of a proletarian state. He claims he never reads books because "I don't want to be part of circulating thought." And he mixes Polish, French, German and passable English with frequent Latin phrases. Starowieyski is probably the most popular poster maker in Poland, especially among the educated young. It is a side of Poland seen in the grotesqueries of Jerzy Kosinski's *The Painted Bird* and is not far removed from the lust, greed and obsessions in Isaac Bashevis Singer's Polish villages. As with these two authors, irony and even sympathy lurk near the awful surfaces. *Vanitas, vanitas* is his refrain. Like

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A simple forceful image was used by Jan J. Aleksiun for poster advertising young artists' exhibition.

Franciszek Starowieyski, known for bizarre imagery, did this poster for play about Polish historical hero.

many other painters who make posters, Starowieyski is retreating to his easel. The past couple of years he has been spending more time on his enormous oils. His project for a huge cycle of national posters has been scrapped. "I have never felt like a professional graphic designer," he insists. "I'm a painter who makes posters. Anyone can produce utility graphics but I want to tell people something."

At the opposite end of the spectrum is the graphic designer Hubert Hilscher (p. 96). He does posters and trademarks, lays out books and has been art and layout director of the arts magazine *Projekt* for the past 20 years. He says, "I don't do portraits or stage sets because I don't consider myself an artist. I practice an artistic craft."

As a student Hilscher had hoped to be an architect and his works incline toward geometry. Like many others of his era, he admired the spare, pure line of Swiss posters which was gradually adapted to the freer, more poetic Polish poster style. The trend is readily visible in his work.

Probably the most popular of all Polish posters are those done for the circus and Hilscher's whimsical beasts are among the best (p. 97). Beginning in 1962, the state circus commissioned leading poster artists to do an ongoing series of circus features—tigers or clowns or acrobats. Strictly speaking they are not advertisements, for they give no dates or details on shows. They are mainly for fun. But Hilscher remains a purist. He prefers traditional posters with ideas expressed economically. "I do not like narrative pictures," he says, decisively dismissing the latest vogue among younger artists.

By the Seventies a new generation was attacking the stylization of its elders. Subjective vision, free association and irrationalism abounded in the works of younger artists. Lettering was correspondingly erratic and sometimes almost illegible. Poster Museum curator Anna Rutkiewicz says, "Posters became so private that the basic function of passing on information was lost." Ironically, overintellectualism is the logical outcome of one of the poster movement's great strengths. Posters were not advertising in the Western sense and so artists were left to interpret freely. Their works did not have to be appealing or really even informative. They had become purely art.

In retrospect, the decade of the Seventies was a watershed. Slapdash works appeared more often, and the atmosphere became more commercial. Artists criticized some agency officials who handed out commis-

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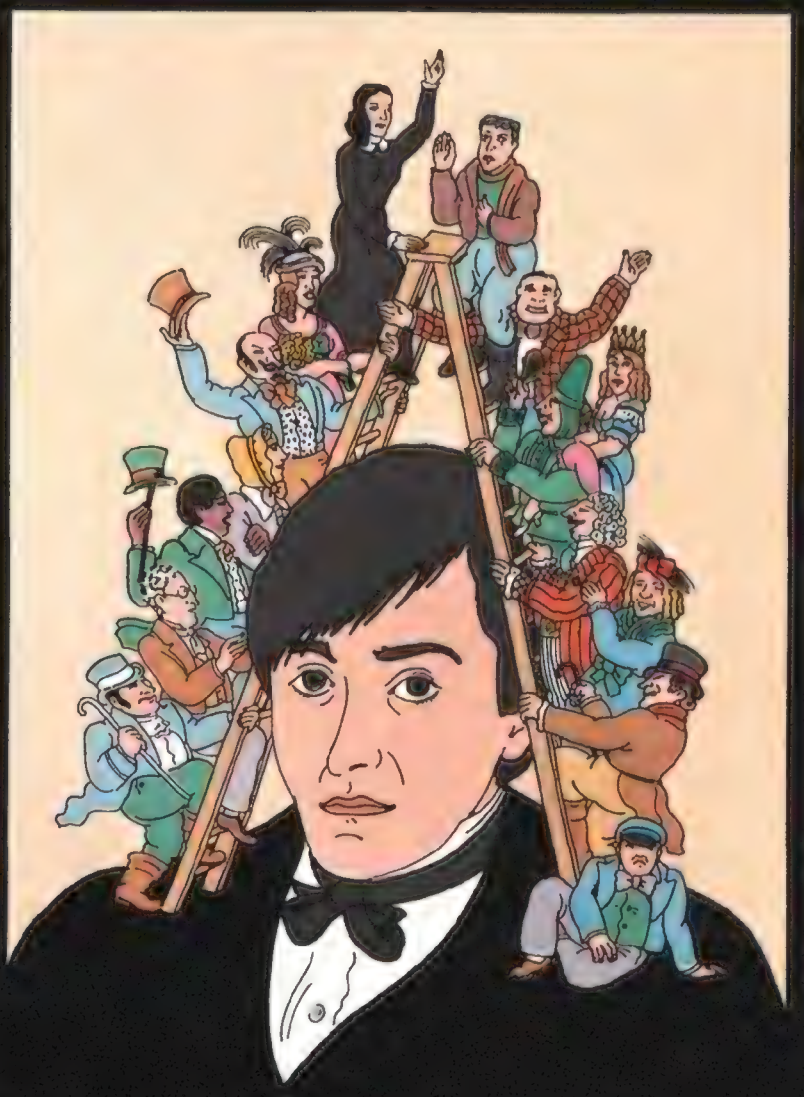


The original Royal Shakespeare Company production in which 39 actors play 150 different Charles Dickens characters—from baronets to beggars, moneylenders to milliners, aristocrats to outcasts. At the center of it all is the impetuous, dauntless and determined young Nicholas and his virtuous sister Kate. We travel with them through a labyrinth of subplots from laughter to tears, music to melodrama.

Mobil

CLOSED CAPTIONED FOR THE HEARING IMPAIRED

AVAILABLE IN PAPERBACK FROM PENGUIN BOOKS

SEYMOUR CHWAST/PUSH-PIN LUBALIN/PECKOLICK, INC. © 1982 MOBIL CORPORATION

Hubert Hilscher, a leading designer, does not consider himself an artist but an artistic craftsman.

sions for being more interested in getting a job done "fast and flashy" than in quality products.

The malaise ended when Solidarity exploded onto center stage. Young designers especially, caught up in the whirlwind of events, reveled in "mountains of work." Posters, often rough but always energetic, were slapped up everywhere. The market was wide open and opportunities seemed unlimited. But the renewal was short and screeched to a halt when martial law was declared.

One of the least publicized victims of the crackdown was the Poster Museum housed in the rebuilt horse stables of the former royal summer residence, Wilanow, just outside Warsaw. Curator Rutkiewicz arrived to find soldiers ripping posters that advertised the current show off the kiosk outside the museum: "We were ordered closed and we had to stay closed until we changed shows." The offending exhibit, "Polish Social and Political Posters from 1944-81," was hastily replaced by a more innocuous one on cultural posters. Of more significance, the Ninth International Poster Biennale, due to take place in Warsaw, was cancelled. Held every two years since 1966 at the Zacheta, Warsaw's largest art gallery, it is undoubtedly the most important international poster competition. For the last biennial in 1980 more than 800 designers from 49 countries submitted works.

The organizing committee, made up primarily of artists and art authorities, pointed to the disruption of mail and communication as a major reason for its postponement. Privately one acknowledged: "We wanted to avoid a showdown with the government. We were afraid of censorship." A likely candidate for first prize was the grand-prize winner of the 1981 national biennial, Janiszewski's *Solidarnosc*, for as a winner it would have automatically gone on to the international competition. Swierzy, the committee's chairman, says "a huge celebration," a combined Ninth and Tenth Biennale, will be held in 1984. The overwhelming feeling, however, is that it is the end of an era. Artists are demoralized and isolated. Many relied on Western markets for their "bread and butter." As Starowieyski says with a wry smile, "You can't do art without a market." And Poland's economic situation is, of course, appalling: the local market for posters has disintegrated. The theater, music and art scene in general are equally demoralized and disrupted and, with its hard-currency problems, the government has stopped importing Western movies. All were previously major outlets for poster artists.

Getting art supplies is difficult even for big-name artists and virtually impossible for young ones. Last year, after being closed for weeks, the one good art store in Warsaw opened with what was rumored to be the last shipment of art supplies from the West. So many people showed up that a window was broken in the crush. The store promptly closed down for another week. When it again reopened, numbers were handed out to ease the lines, and shelves emptied in a couple of days.

The country's economic problems have hit young artists particularly hard. Many do not make it and go into other fields. Some hang on by designing book covers while waiting for bigger orders. Others found the best option was to leave, and have been working in the greener fields of Western Europe and the United States. Now, with "the war," as the Poles call martial law, artists caught outside are waiting there to see what happens. Meanwhile, those left behind are only slowly coming out of the paralysis that has engulfed them since the crackdown. Says one, "In wartime the muses are silent." Others wonder if their past work for Solidarity will make it hard for them to get those all-important commissions. Some of them vow they will never work for anyone else.

The most popular posters are on circus themes and Hilscher's are standouts; here, a circus lion.

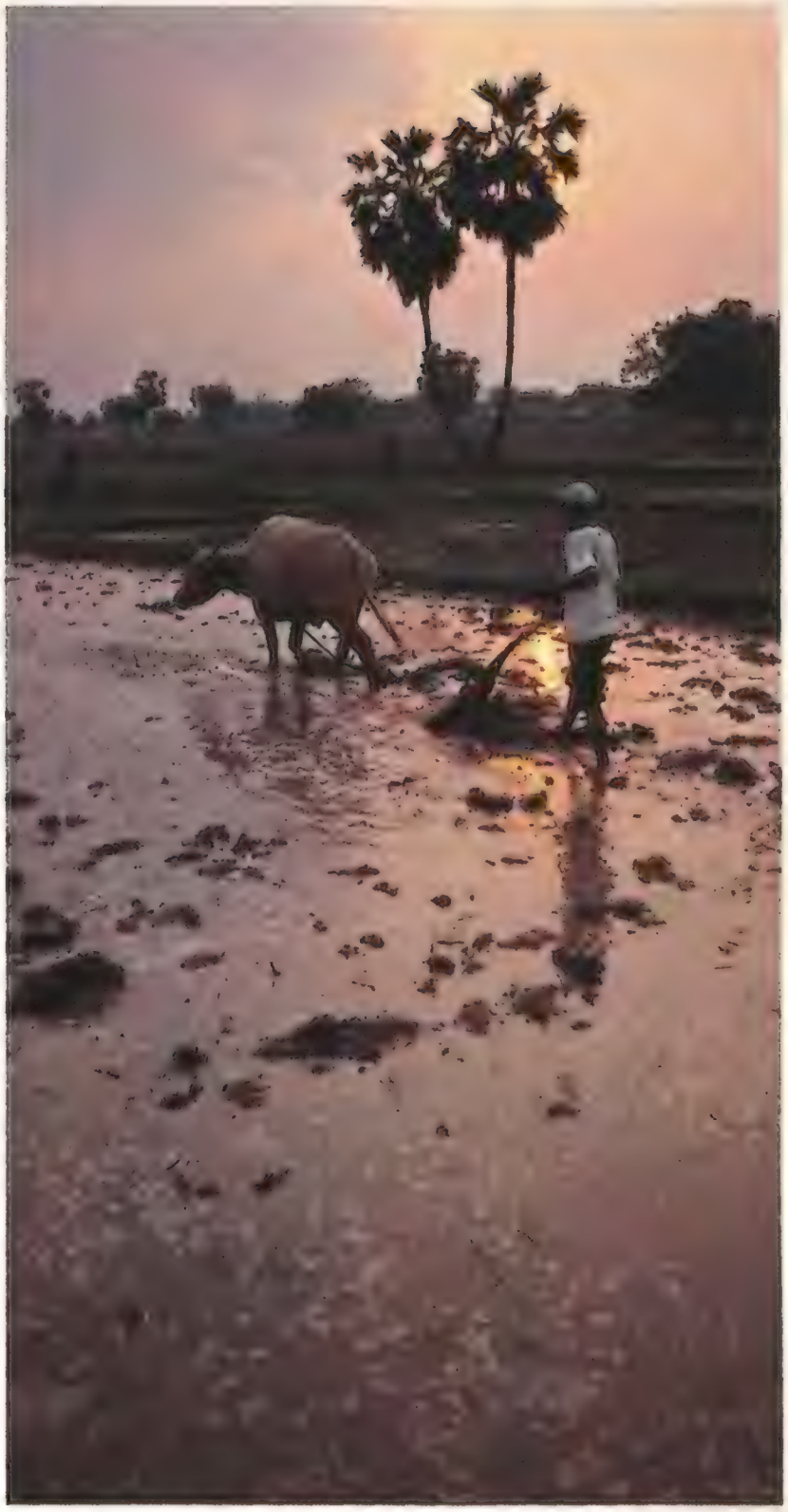
CYRK

Rare Ban Chiang pot, unearthed intact, has swirling lines painted freehand by artist about 2,000 years ago.

By John Pfeiffer

At Ban Chiang a lost civilization comes to light

Excavation of a Thai village site yields highly developed pottery and bronze work in a region once considered a backwater



Farmer near Ban Chiang plows rice paddy; bringing wild rice into cultivation was early step in civilization.

In the days of the empire upon which the sun never set, the good old imperial days of which Kipling so eloquently sang, archaeologists and historians (and racists) made much of the fact that civilization arose in the valleys of the Tigris and Euphrates. Priority implied superiority, reflecting the arrogance of the West.

That viewpoint is by no means defunct today, but it is certainly less popular. For one thing, becoming civilized is not quite the untainted mark of distinction it was two world wars and a holocaust ago. For another, whether it happened sooner here than there seems of limited significance in light of the slow pace of earlier times. It happened suddenly in many places within two or three millennia, which is practically simultaneous, considering that members of the genus *Homo* had been living uncivilized wilderness lives for some two million previous years.

Current studies focus on the phenomenon itself, wherever it occurred—"civilization" as shorthand for the explosive phase of human evolution that continues to accelerate in our own times. Furthermore, fresh insights are coming from an unexpected and relatively untapped part of the world. History books have little if anything to say about developments in Southeast Asia, the region extending from eastern India to the South China Sea and its archipelagoes. Regarded

"Vulcan," a skeleton from about 1500 B.C., was buried with bronze bracelets, pellets (at head) for hunting.

Old men at Ban Chiang still make split-string bows for shooting pellets similar to those buried with Vulcan.

as a bush-league cultural backwater a mere decade or so ago, the 1,740,000-square-mile land mass now rates as an archaeological bonanza open for discovery.

The entire drama of prehistory was played out on that enormous stage as people made the fateful shift from hunting-gathering, the simplest and most stable form of society yet evolved, to the hectic unpredictabilities of the settled life—from small, egalitarian bands of nomads with few possessions and no full-time leaders, to great administrative-ceremonial centers run by wealthy elites. Such changes did not occur in isolation. Southeast Asia had an important place in the complex communications system, the exchanges of goods and information connecting far-flung regions of the Old World.

The biggest surprise of all has been the recent discovery in Thailand, a country the size of Spain and still largely unexplored, of "a lost Bronze Age" dating back 3,500 to 4,500 years. Archaeologists expected to find evidence of bronze ages in traditional "nuclear" regions—in North China, during the same period, at the great bend of the Yellow River where urban centers arose; and somewhat earlier in the city-states of the Near East—but certainly not in a land supposedly off the beaten track toward civilization and, most certainly, not in mere villages.

Yet the discovery came in such a setting. A striking example is Ban Chiang, on the Khorat Plateau of northeastern Thailand. A village on stilts, houses raised high above rainy-season muds, it sits on top of buried treasure, on a 124-acre mound built up layer upon layer during the past six thousand years by successive generations of settlers. The late Chester Gorman of the University of Pennsylvania's University

Bronze bangles, spearpoint and other artifacts of ancient villagers show high level of art, technology.

Pot made over 4,500 years ago has rim and base holes, perhaps used to string it up out of reach of rodents.

Museum (right), an archaeologist with an uncanny ability to make major finds and exploit them to the hilt, was the first to appreciate the special significance of Ban Chiang. Two seasons of full-scale excavation starting in 1974, and directed jointly by Gorman and Pisit Charoenwongsa of the Thai Fine Arts Department, yielded 18 tons of material, enough for a decade or more of basic research. The collection includes 123 burials and an estimated 1.25 million shards. There are more than 350 bronze bracelets, anklets, rings, ax heads and spearheads, and 2,000 other objects from crucibles to casting-mold fragments.

"Ban Chiang: Discovery of a Lost Bronze Age," an exhibition based on the project, was organized by the University Museum, the Smithsonian Institution Traveling Exhibition Service, and the National Museums Division of Thailand's Department of Fine Arts. It is now showing at the University Museum through January 31, and will then travel to the Science Place, Dallas (March 1-May 31); Louisville Museum of History and Science (July 1-September 30); National Museum of Natural History, Washington (November 1, 1983-January 31, 1984); Boston Science Museum (March 1-May 31, 1984); American Museum of Natural History, New York (November 1, 1984-January 31, 1985) and Los Angeles County Museum of Natural History (March 1-May 31, 1985).

The Ban Chiang artifacts in bronze and iron have been the focus of an extensive analytical investigation of their composition and microstructure, work con-

John Pfeiffer is a former professor of anthropology at Rutgers. His recent book, The Creative Explosion, *is an examination of the origins of art and religion.*

Chester Gorman discovered and excavated Stone Age sites in Thailand and codirected Ban Chiang dig.

In a Thai dig at Ban Chiang, pots left only partly unearthed demonstrate how archaeologists find them.

ducted at the University of Pennsylvania by Robert Maddin and Tamara Stech. Their research has demonstrated the high degree of craftsmanship responsible for the metalwork at the site. In the production of a bronze, for example, the proportion of tin added to the copper is critical. The optimum level is about ten percent: below that, the metal falls short of maximum hardness; above that, with each additional percentage of tin the potential for brittle failure increases. Most bronzes by Ban Chiang metalworkers test out in the ten percent range. Even more impressive, they learned to achieve an unusual silvery sheen in jewelry by incorporating up to 25 percent tin into the alloy, a process that required heating an object to about 1,000 degrees F and then plunging it into water. This can be deduced from microscopic studies of crystal structure. "Metal preserves the memory of past events," explains Pennsylvania investigator Vincent Pigott.

Ironwork appears later in the Ban Chiang record, about 2,500 years ago. One of the most striking objects recovered is a bimetallic spearhead nearly a foot long, an iron blade set in a bronze socket. But the most highly prized of Ban Chiang artifacts, by illegitimate excavators, are the specimens of decorated pottery. Unfortunately hundreds, perhaps thousands, of pots have been smuggled out of the site by villagers digging at night under their own houses and quite ready to run the risk of fines and jail sentences. After all, it is their land and the going price for a specimen in good condition, about $100, represents a healthy proportion of their annual income. The markup is appreciable. A New York antiquities dealer recently sold

A variety of Ban Chiang pots, reassembled from shards, shows the "baroque" individuality of artists' styles.

a "hot" Ban Chiang pot, painted and complete with certificate of authenticity, for $2,900.

From the investigator's standpoint, looting amounts to ripping pages at random out of a detective novel. Every pot, every artifact, is meaningful mainly for its context, its position in relation to other artifacts uncovered. It may help in reconstructing a ritual, indicate a cultural phase and a relative date, and suggest relationships with other cultures. The Ban Chiang

Modern potters near Ban Chiang site still make their pots in traditional ways, using wet leaf to shape rim.

dig yielded only about a dozen intact pots, which put an extra premium on one of the most difficult and demanding procedures in archaeology, trying to put pieces of pottery back together again.

Joyce White, a University Museum archaeologist currently preparing a doctoral thesis on Ban Chiang ecology, happens to possess the special talent required for such three-dimensional superjigsaw puzzles. In one notable case, confronted with more than 6,000 shards, she managed to sort out some 2,000 pieces that produced nine partially or nearly completely reassembled pots.

Pottery was often associated with burials and offerings. A number of funerary vessels dating to the early Ban Chiang period, from 3600 B.C. to 1000 B.C., contained the remains of infants a month or two old. Other vessels contained traces of rice, fish vertebrae and turtle bones. They were made in many different styles: six inches to two or three feet tall, globular and cylindrical, long- and short-necked, with or without feet, burnished, coated, painted, cord-marked (produced while slapping wet clay with a cord-wrapped paddle during the shaping process). Some pots were incised and painted with occasional human, animal and plant figures, but most often with abstract patterns including swirls that resemble giant fingerprints. Diversity reached a high point during the late period, about 300 B.C. to A.D. 200. "The profligacy of pattern and form approaches the baroque," notes Charles Higham of the University of Otago in New Zealand, "as if each individual potter spent a lifetime elaborating new motifs."

Ban Chiang provides glimpses of a life-style that flourished far from the traditional "cradles of civilization," and far beyond the confines of a single site or a single area. Related Khorat Plateau sites, excavated by Higham, his Otago colleague Donn Bayard and Charoenwongsa, confirm the existence of many village communities—farming folk turning out high-quality ceramics and metal artifacts without any of the other traditional trappings of complex societies such as cita-

Infant burial, from oldest layers at site, may reflect high mortality rate, or the practice of infanticide.

del or temple grounds. For clues to the roots of this phenomenon, we turn to pre-village, pre-agricultural people who adapted to the tropical rain forest and the marshlands dominating not only present-day Southeast Asia, but also all of China south of the Tsinling Mountains and the Yangtze River—which, ecologically and culturally, can be regarded as part of prehistoric Southeast Asia.

Small bands of hunter-gatherers, four or five families at the most, had that evergreen wilderness to themselves for some 10,000 years and perhaps a great deal longer. We know them from sites widely scattered, north-south from Vietnam to Sumatra and east-west from Burma to the Gulf of Tonkin coast. One of the most carefully studied of these sites is Spirit Cave in a remote highland cliffside some 375 miles northwest of Ban Chiang near the Burmese border. Excavated in the late 1960s by Gorman during his graduate-school days, it served as home base for people who exploited the environment about 14,000 to 7,500 years ago.

They went after a wide variety of fish and wildlife, everything from deer, pigs and several species of monkey to carp, crabs, bamboo rats, otters and flying squirrels. Plants, identified from tiny fragments painstakingly collected by sifting shovelfuls of dirt through fine-mesh screens, included foods such as nuts, water chestnuts, bottle gourds (perhaps also used as containers), beans and melons. Bamboo, a multipurpose tropical grass which can serve as a building or projectile-point material as well as food, is also represented. Two other plants, the candlenut and a relative of the castor-oil species, are sources of poison, and Higham suggests that they may have been used to tip sharp bamboo darts or arrowheads.

A major change took place toward the end of the Spirit Cave occupation, a change heralded by the sudden appearance of new artifacts. People seem to have been living under some pressure to adopt a new dietary regime. Starting 8,000 years ago, two tool types were added to a kit which had hitherto consisted primarily of scrapers, choppers and flakes. The new tools were adzes and small knives, the sort used in recent historical times for woodworking and to harvest edible grasses respectively. Appearing at about the same time was pottery, cord-marked and burnished, an innovation generally although not always associated with food preparation and storage, and with settled life.

Similar innovations, observed in the Near East and elsewhere, indicate an increasing reliance on plant foods and, by implication, a decreasing use of meat. The presumption is strong that one of the main plants being exploited was rice, an edible wild grass growing everywhere in marshes and along the banks of meandering Southeast Asian rivers. The earliest clear evidence for its cultivation comes from a site near Hangchow in South China, dating back 7,000 years. The evidence at Ban Chiang is indirect. Rice husks were mixed liberally in pottery clays to bind or stiffen the material (a practice still followed today), suggesting an abundance of the cereal grass and probable domestication.

Remains of a Bronze Age burial

We do not know what pressures brought about the focus on plant foods in general, and rice in particular. The ending of an Ice Age could have had something to do with it. As mile-high glaciers began melting some 15,000 or more years ago, sea levels rose 200 to 300 feet, inundating extensive coastal plains. The land area of Southeast Asia was reduced by almost half, leaving only the high spots above the waves, the thousands of islands in today's South China Sea and associated waters, and causing a sharp drop in animal populations. This effect, combined with a probable rise in human populations, provides at least a partial explanation for the so-called agricultural revolution.

Agriculture marked a stage of cultural evolution. It met a need, and so did metallurgy and fine ceramics. A burial at Ban Chiang indicates one function of such sophisticated artifacts, a tall adult male nicknamed "Vulcan" and laid to rest with a pot at his feet, a set of bronze bracelets on his left wrist, and a socketed bronze ax head above his left shoulder (p.100). Such items were not for everyone. Vulcan was presumably a man of rank and distinction. Furthermore, positions like his may have been hereditary. There are child burials with jewelry including anklets and bracelets, and individuals who die young rarely have a chance to accomplish deeds worthy of special honors.

Rank, by the way, is something that generally followed the appearance of agriculture. Farming took

Photography: Scott Morgan

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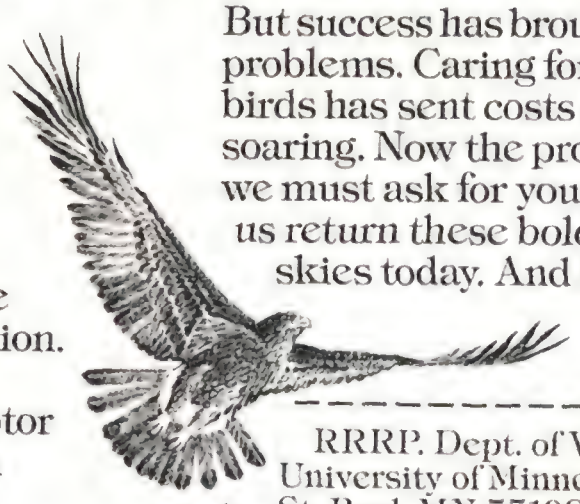

But success has brought RRRP serious money problems. Caring for more and still more birds has sent costs for feed and treatment soaring. Now the program itself is endangered; we must ask for your support. You can help us return these bold, beautiful birds to our skies today. And keep them there for your children to see tomorrow. Please join us now.

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some of the spontaneity and informality out of life. There were plants and animals to be tended, dry and rainy seasons, storehouses to be filled with surpluses for winter subsistence and as insurance against unpredictable crop failures. All of which called for planning and, eventually, for planners, full-time specialists who, like potters and metalworkers, produced no food and were provisioned by people who did. Institutionalized privilege, unknown in traditional hunter-gatherer societies, was accompanied by the emergence of ornaments and other prized possessions to identify and validate authority.

An interesting question is where the technology came from. It could have been borrowed from any one of a number of places or even have arisen locally as an independent development. In the Near East first copper appeared alone, then copper alloys, then iron—that sequence is well documented. But in Ban Chiang and other Khorat Plateau sites, bronze seems to have appeared full-blown; missing so far is a solid body of evidence for earlier copper-working experiments.

We also have a great deal to learn about developments beyond the village level. Marks of a more and more complicated life-style were first spotted on aerial photographs taken over the southern part of the Khorat region shortly after World War II. Geometric patterns, some rectangular but mostly oval, turned out to be large mounds surrounded by moats and earthen defense walls. Latest information about the mounds comes from Higham and his associates, who recently surveyed parts of the region and are still analyzing results. A preliminary statement reports the finding and mapping of 60 moated settlements, the majority established during the first millennium B.C. and ranging in size from an acre or so to more than 400 acres. Their layout suggests the beginnings of centralization, the shaping of small societies competing for living space and exercising control over staked-out territories. Similar mounds exist elsewhere in Southeast Asia, in the Bangkok Plain and northeastern Cambodia.

Something rather more elaborate arose about A.D. 200 some 750 miles to the south in the Mekong River Delta. Called Oc-èo, it is an inland center covering 1.7 square miles. A small-scale Venice, Oc-èo has a system of canals extending deep into back-country village terrain, and connecting the city or protocity with Gulf of Thailand waters 15 miles away. High-ranking families lived in palaces, commoners in humbler settings, but all human dwellings were made of perishable materials—wood and walls of earth packed tight by pounding, a custom widespread in Southeast Asia and China. Stone and brick were reserved for gods, whose temples dominated the city's center.

The status and power of its leaders are evident from some of the artifacts found there and currently on display at the Saigon Museum: two gold buckles, one studded with gems; crystal beads; a gold bell; and rings of gold and sapphire. Other artifacts indicate Oc-èo's connections with the bustling centers of other evolving societies: a seal ring with an inscription written in Sanskrit, a life-sized Hindu statue, and a gold medal from Rome dated A.D. 152.

All signs point to an acceleration in the pace of cultural evolution, a major step up in the scale of things. A territory in transition was ripe for innovation in trade items and ideas as well, for a new variety of luxury goods serving as more impressive status symbols, and for new concepts concerning kings, ruling families and dynasties to centralize and extend the wielding of power. Southeast Asia held a central position in an increasingly intricate network that interconnected, by a complex of branches and subbranches, China, India and more remote points west.

We know the prehistory of Southeast Asia in bare outline only. A territory "waiting to be excavated" according to one authority, it has been neglected because of formidable difficulties in finding and exploiting good sites in a world of rain forests and intensively cultivated rice paddies—and, perhaps even more important, because of a feeling that explorations in "barbarian" lands would be a waste of time. That feeling began fading fast with the discovery of Spirit Cave, Ban Chiang and other Thai sites. Southeast Asia now commands international recognition as an archaeological frontier, rich in traces of times past, which may be expected to widen our understanding of cultural evolution everywhere.

Pieced together from shards like an ancient jigsaw puzzle, Ban Chiang pot is lit to reveal the fragments.

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By Richard Wolkomir

He tells students to 'go and make a business happen'

At Carnegie-Mellon, Dwight Baumann hatches entrepreneur fledglings, and makes it pay

On his trail bike, Baumann commutes between home and his office on the Carnegie-Mellon University campus in Pittsburgh.

At Carnegie-Mellon University in Pittsburgh Dr. Dwight Maylon Billy Baumann is hatching tycoons in the engineering building. He sends his hatchlings, programmed to wheel and deal, out into the economy. "We're doing a scientific experiment here," he says. "We want to see if we can raise entrepreneurs in captivity." When the student fledglings have learned to compose a bravura business plan, to figure cash flow, to keep a new company breathing, those with the peppiest proposals may receive aid for their new ventures.

Can entrepreneurs—those economic daredevils who risk everything on a new idea—actually be academically replicated? Similar "experiments" are under way at universities nationwide. So far, many seem to be working.

Recently, for instance, Baumann received a telephone call from a vice-president of one of the country's largest corporations. The executive was peeved. A burly, disheveled onetime farmer, Baumann squinted impassively at the ceiling as the caller complained angrily about the competition his company faced from a tiny electronics firm, one of the engineering professor's nestlings.

"You mean you're letting a couple of college students beat you out for that contract?" Baumann asked. There was a stunned silence. Then the vice-president said: "I never thought of it that way."

Baumann's office is an incubator for new corporations: a computerized taxi service, a theatrical troupe, a newspaper chain, electronic bookkeeping for physicians, companies making new medical immunization serums, ultrasonic toy guns, microfiche atlases, diesel fuel from sunflower seeds. When he was a child on a North Dakota farm, Dwight Baumann's hero was Thomas Edison, crackerjack inventor, canny businessman, technological prestidigitator. Now Baumann wants to revitalize the kind of dynamic spirit that Edison personified.

After World War II, large corporations dominated the financial skyline, not the entrepreneur's made-it-myself business jerry-built from scrounged

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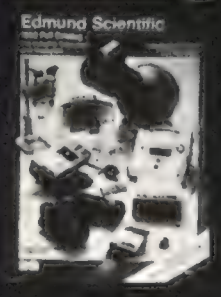

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Douglas P. Turner now manages Pittsburgh's innovative Peoples Cab.

dollars, a wild idea and lots of brass. Without those entrepreneurial powerhouses—the Carnegies, Fords, Eastmans, Bells, Westinghouses, Eli Whitneys, Edisons—would the American economy lose its fizz?

Now the indicators say that the entrepreneur, long dormant, is rallying. In 1981, some 587,000 new companies were incorporated, 53,000 more than in 1980, and an 80 percent increase over 1975. In a recent report on the new entrepreneurial Zeitgeist, the *Harvard Business Review* noted that today "several hundred colleges and universities—versus only a handful a decade ago—offer courses on starting and operating small businesses."

Dwight Baumann, 49, is one of the founding fathers of all this academic razzle-dazzle. He crisscrosses the country, persuading university administrators and government officials that we must encourage the entrepreneurial spirit—for many studies have shown that small businesses, not the corporate jumbos, are where most technological advances take place. The Center for Entrepreneurial Development, Inc., which Baumann founded, has been a model for entrepreneurial programs at many other institutions.

The Center, originally financed by a National Science Foundation grant, is now self-sufficient. The best of the projects it engenders receive grants; in exchange the Center takes shares of stock and, if a project succeeds, gets a payback.

In 1963, when Baumann decided to teach entrepreneurship at the Massachusetts Institute of Technology, the idea was novel. For a Thomas Edison fan, however, encouraging cub engineers to design new businesses, as well as new machines, was a logical move.

The early engineering schools, he says, often were funded by entrepreneurs such as Andrew Carnegie and George Eastman. But the schools concentrated on technological training, at the expense of business skills. Society created business schools "as a Band-Aid," to make up for the engineers' marketplace innocence, Baumann believes.

One dragon against which Baumann wars is the case method of teaching, developed at Harvard Business School and widely used. He maintains that analyzing past business successes and failures does little to develop creativity and the ability to act decisively.

"Many of the early entrepreneurs were farm boys," says Baumann. By age ten, he himself was an inveterate

Peoples Cab Co. taxicab meter is hooked to fare computer at office.

Richard Wolkomir wrote about high-altitude weather research in the April 1982 SMITHSONIAN.

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Baumann talks with Krishnahadi Pribadi in his former student's new office.

tinkerer, experimenting with light's effects on egg production in his father's henhouse. At age 11, he electrified the family's North Dakota farmhouse. He designed a four-wheel-drive tractor for the family farm and built a motor scooter for himself. Meanwhile, he was reading his way through the village library. And he also learned a lesson from pigs.

During World War II the U.S. Department of Agriculture was proselytizing for purebred hogs, which fatten faster on less feed. State land-grant colleges, zealots of the new creed, deployed extension agents and 4-H Clubs as missionaries to convert the agricultural heathen.

Baumann's parents, who had started a 4-H Club in Ashley, North Dakota, quickly became purebred hog enthusiasts. "But most of the neighbors, like my parents, were descended from generations of German farmers," he remembers. "They said no one could tell them anything about farming." In particular, a neighbor named Gottlieb sneered at the new pigs, forbidding his son to buy purebred hogs for $15 for a 4-H project. "They'll only die," Gottlieb insisted.

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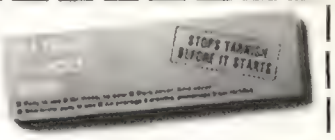

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Gottlieb anted up, grumbling. Three years later, in front of the neighboring farm, a new sign went up: "Gottlieb & Son—Purebred Hogs."

Decades afterward, wondering how to train entrepreneurs, Baumann remembered the pigs and the zeal of the land-grant colleges in turning farm boys into businessmen. Can entrepreneurs be taught, or do they still grow only in the wild? To find out, in 1970 Baumann moved from MIT to Carnegie-Mellon. He chose Pittsburgh because the city was virtually an entrepreneurial desert.

In 1971, he started the Center for Entrepreneurial Development, Inc. as an adjunct to CMU's own courses, to offer graduate students and others aid in starting new businesses.

The Center has a revolving fund: if a student's business plan interests the fund's managers, they may offer start-up assistance in return for shares of stock. If the business succeeds, the new company repays the loan, adding something extra (the stock) to help fund entrepreneurs in the future.

Former Baumann student Romesh Wadhwani now manufactures robots.

Bruce Read and wife Barbara McDowell display wares in one of their stores.

Baumann conceived the Center as something like a teaching hospital. That required a patient. So in 1972 the Center bought a Pittsburgh company, Peoples Cab, in bankruptcy proceedings. Under its several managers, Peoples Cab has grown substantially. Douglas P. Turner (p. 112), a Carnegie-Mellon graduate who currently manages the company, says 32 of the red-and-white vehicles now scoot through the mazelike streets of the old city.

Working with Peoples, the students have been developing new wrinkles in urban transportation, notably a radically different taxi meter (p. 112). Standard meters are connected to a cab's transmission. The Center's patented meter, computerized, is keyed to the census map of the city. At Peoples headquarters, specially programmed computers calculate the time required for a taxi to travel between any two addresses, factoring in time of day and other variables, and transmitting the data to the meter in the cab.

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Peoples Cab could spawn further companies. For instance, Baumann would like to market the computerized meter nationwide. "Besides figuring fares, the computer also can do the company's bookkeeping—a complete business system for the taxi company," he says. And he adds, with entrepreneurial pride, "Peoples is turning into a regular business."

Meanwhile, the Center is contemplating another possible spin-off from the "smart" taxi meter. "You can send a package via Federal Express, but you can't send your 10-year-old daughter," says Baumann. "What if you could buy her a ticket covering cab fare and air fare, door to door, from your home to her destination in another city?" He foresees such ticket franchises nationwide. And he says it would end a common expense-account scam: taxi-fare padding.

Another of the Center's star per-

Sunil Wadhwani with bladder-irrigating devices sold by his company, Urotec.

Arnold Cook wields a toy gun developed by students in a Baumann class project.

formers was Compugard, formed by two students in 1972 to market computerized personnel-security systems for large buildings. Begun with $40,000 in services from the Center, Compugard quickly interested Aerospace Corporation.

At a meeting in Baumann's office, the Aerospace executives were edgy about signing a deal with a company consisting of two graduate engineering students.

"Your company isn't even incorporated yet," they said.

"Give us a couple of days," Baumann told them.

"Look, an established corporation can put 40 researchers to work tomorrow, developing the kind of system we want," one of the executives pointed out.

"Compugard has the system right now," Baumann said.

"Sure, but these fellows have no experience," said the executive. "What backs them up?"

Baumann reached into his desk drawer and pulled out his 16-page resumé. He pointed to the two high-technology companies he had started

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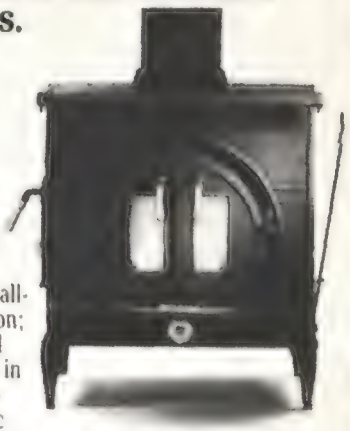

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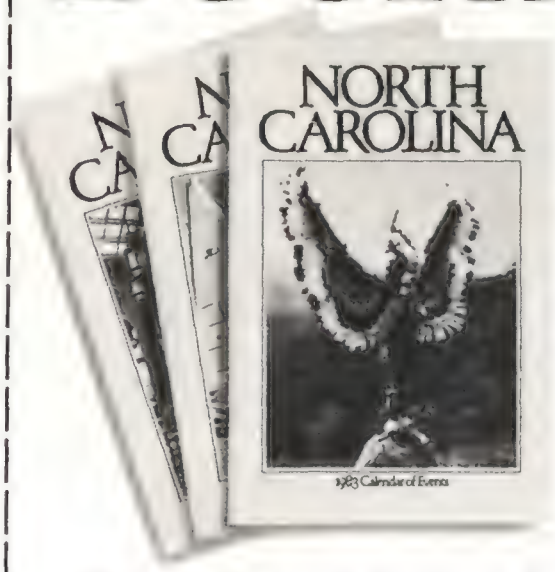

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himself, later selling them to large corporations, believing that to teach entrepreneurs he had to be one.

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Compugard soon repaid the Center, adding a contribution eventually worth $90,000 to the revolving fund. In time the founders sold Compugard to a large international corporation.

"Just running the company was too routine—my joy is in the creation of things," says one of Compugard's founders, Krishnahadi S. Pribadi, born in Indonesia. Now he has founded another electronics company.

Other alumni have gone into a wide variety of businesses. Romesh Wadhwani (p. 114) is making robots on his own; Bruce Read, with his wife Barbara McDowell, is building up chains of outlets including Munchkins & Co., which sells all manner of trinkets for moppets (p. 115). Sunil Wadhwani (p. 116), brother of Romesh, is marketing a hospital device.

One of Baumann's students, Arnold Cook, is now working out marketing strategies for a class project, an ultrasonic toy gun (a direct "hit" switches off your opponent's matching gun). But the gun is only one of his projects.

He and other students discovered that gas and electric utility trucks must carry a shelf full of atlases, showing buried pipes and wires. Now they have designed a portable microfiche map viewer that could ride on a van's dashboard, displaying utility maps on a screen, with each of the weighty atlases reduced to a thin sheet.

According to Dr. Baumann, psychological studies reveal that, compared with the average person, the entrepreneur has no abnormal inclination to take risks. But entrepreneurs do like to feel that they have special information, a secret edge. Perhaps the universal trait is wanting no boss.

According to Jack Thorne, who sold his own successful Los Angeles electronics company, Scionics, Inc., and now teaches at Carnegie-Mellon,

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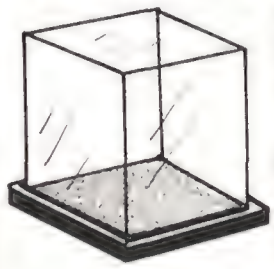

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entrepreneurs "want to do their own thing, their own way—they are very independent, don't want to fill out forms, and don't want to work for big companies." More and more frequently, he says, top executives at major corporations are calling him in as a consultant on what will be "the big area of emphasis in the 1980s: When it comes to technological innovation, how can muscle-bound Goliaths compete with quick-moving little Davids?"

To get into Carnegie-Mellon's entrepreneurial course, students have camped outside the registration office all night in sleeping bags. And, according to Baumann, even a recession can bring entrepreneurs bubbling to the surface—"Starting a new business is one answer to being out of a job."

Recently, outside a Pittsburgh restaurant late one evening, Baumann's car failed to start. While his wife and friends debated what to do, he rummaged around in the trunk and found an old curtain rod. Then he opened the hood and, with characteristic ingenuity, burrowed into the engine compartment and used the metal to bypass the source of his problem: a short-circuited "lock-out" on the shift mechanism.

"Try turning the key," he told his wife. The engine started.

The next morning, before Baumann drove to the university, he rigged a more permanent bypass, activated by a toggle switch on the dashboard. He turned the key, flipped the switch, and the car started.

"I wonder if we could patent that?" he jokingly asked a visitor. "We could start a company."

Baumann at work in his littered, unquiet office; on computer screen is an example of his entrepreneurial students' "creative programming."

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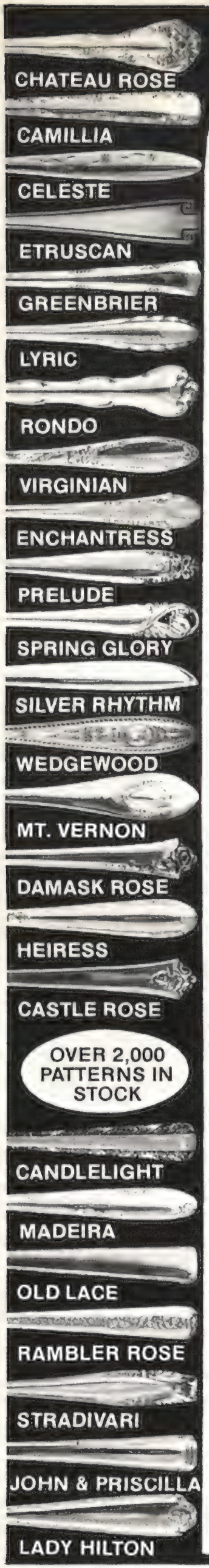

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Book reviews

Hopi
Susanne and Jake Page
Harry N. Abrams, $50

It is commonplace to think of American Indian culture as "one with nature"—close to the Earth, its bounty and severity. The notion is true as far as it goes, but another dimen-

Elaborately decorated kachina doll represents Crow Mother, one of the spirits in the Hopi pantheon.

sion is there. The Hopi, as depicted in this important new study, are as involved with the spirits in the air and the life of the world to come as they are with digging and delving.

Their prayerful existence has led them to be regarded by some scholars as the most devout people on the face of the Earth. (Indeed, the word Hopi is usually rendered as the "peaceful" or "righteous" people.)

Certainly the Hopi liturgical year is as elaborate as that in any religion. It amounts to a constant round of festivities celebrating and re-creating Hopi origins, closely tied to rites-of-passage ceremonies and rituals to prompt the rains and increase the soil's bounty.

Whole villages take part in the preparations, attending ceremonies that seem to run unabated from January through August. The men raise plots of ritual corn in colors that signify traditional Hopi origins and the sacred directions: yellow corn, northwest; red, southeast; blue, southwest; white, northeast; purple, up; speckled, down. Nearly everyone creates craft objects—silver, pottery, kachina dolls, weavings and costumes—to illuminate the festivities. Elaborate music, chants and dances accompany the rites. Even cuisine (with a ceremonial flatbread made from blue corn) and architecture (in the construction of the kivas, or ceremonial chambers) are enlisted.

Susanne and Jake Page have a major achievement on their hands with this book. Since 1974, off and on, this husband and wife team of writer and photographer have lived among the Hopi in their quest to capture the soft edges and arcane subtleties of daily life. In fact, it is a tribute to their sensitivity and scholarship that they were invited to do the book in the first place. Hopi leaders, fed up with tourists interfering with their sacred ceremonies, closed off the reservation to photography in 1910.

The popular conception of the kachina dolls is a case in point. It has been supposed that these fanciful little figures represent ogre spirits, things that go bump in the night. In fact, the kachinas are a group of some 300 major spirits in the Hopi pantheon (SMITHSONIAN, November 1981). They are supposed to abide in the San Francisco Peaks, about 80 miles southwest of the villages of the Black Mesa area that the Hopi have called home for a millennium. The role of the kachinas is to watch over mankind and, if it deserves help, to ease it through the rigors of life. The kachina dolls are artfully and sometimes phantasmagorically carved images of these gods, not necessarily for veneration, but more often as gifts to children, to teach them about their ancestral religion.

Many of the 8,500 Hopi now living have regular jobs, but the real focus of their lives is their religion and its ceremonies. Nor can it be denied that such devoutness has its rewards. Consider, for one, the following story of consolation.

A family known to the Pages had a son, Tony, who died in a city far away from the reservation. Members of the family were profoundly disturbed because they believed that unless Tony were buried within four days, he would be unable to make the journey to the spirit world.

"Immediately upon the arrival of Tony's body, on the fifth day, the appropriate rites took place. His hair was ritually washed with yucca soap, and food was put in his mouth by his aunts. Special food was placed near the grave for the spirits. All Tony's possessions were placed in the grave with him, his aunts added heaps of blankets to keep him warm on his journey, and the grave was sealed.

"The family returned to their house, exhausted and anxious. It was an overcast day but nowhere on the horizon was there evidence of rain. No gray streaks of rain united the sky with the earth. People stood around in a kind of daze. Outside, a younger brother nervously dug a shallow pit in the backyard and built a fire in it to roast some corn. A sister tearfully drove away to her home off the reservation in yet another city.

"It grew slightly darker. The wind blew. It began to rain. It rained on the family's house, but on none of the neighboring houses—a little circle of rainfall, the drops spattering in the dust and making little cuplike depressions. The family dashed out of the house, literally jumping up and down, laughing with joy.

" 'It's Tony!' they yelled, 'It's Tony! He made it!' They hugged one another and stood in the rain until, after a few minutes, it stopped and left the sky overcast—gray and calm."

Near the close of this fine book, there

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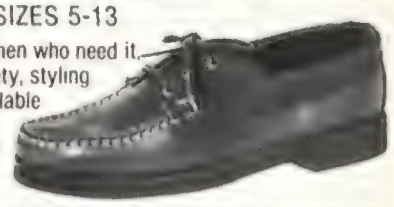

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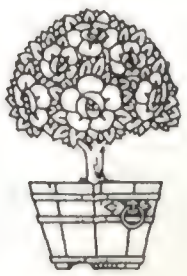

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is a wondrously eloquent photograph of some forlorn, winter-dead scrub bushes. Tied to them are a cloud of pahos, eagle and turkey feathers, that act as prayer tokens for long life and prosperity.

Like those feathers, this book seems to me to be a charmed and charming paho. If I were a Hopi, I'd be very proud of these pages.

Michael Olmert
Writer and critic

The Secularization of the Soul: Psychical Research in Modern Britain
John J. Cerullo
Institute for the Study of Human Issues, $18.50

In contrast to the kook and crank groups insisting that we can talk with the dead and which see auras around yogurt, the British Society for Psychical Research (S.P.R.) has gained a reputation as a relatively sober group. It has won its name partially through some earnest activities, and thanks to the public support of the group by some of Britain's leading lights, which have included two prime ministers (Gladstone and Balfour), numerous fellows of the Royal Society, and a number of tough-minded British philosophers. Why did psychic research attract such attention from intellectuals who would not have been caught dead at a seance? Because—argues John Cerullo in this history of the S.P.R.—the Society held out the possibility that one could be scientific and still believe in the existence of the soul.

The soul, after all, traditionally had been taken to be the imperceptible essence of an individual. As imperceptible, it was not a fit object of scientific study. In fact, implicit in science's mandate is the necessity of rejecting claims which cannot be backed up by evidence, and what evidence can an invisible, massless, odorless soul leave of its existence? As the sway of science grew in the 19th century, it seemed the soul's time was up.

Then in 1848, in Hydesville, New York, the Fox sisters heard raps they claimed were caused by the spirit of a dead peddler. The Spiritualist movement began with those raps, which were taken to be physical evidence in this world of a nonphysical, otherwordly soul, evidence subject to scientific investigation. Yet, with a few exceptions (notably Alfred Russel Wallace), Victorian scientists were

hostile to Spiritualism. The S.P.R. was founded by a Spiritualist in 1882 to try to counter the scientific community's reluctance to delve into cases where it seemed the Other World had intruded into this one.

Much of Cerullo's book is devoted to charting the S.P.R.'s rapid movement away from Spiritualism, beginning with the appointment of Henry Sidgwick as its first leader. Why would a respected professor of philosophy at Cambridge take on such a position? Cerullo shows how Sidgwick's moral philosophy demanded a belief in an afterlife: if there were none, there would be no reason to do anything except hedonistically to seek pleasure. Society therefore needs science to prove there is a soul. Since science cannot reach into the afterlife, it will have to find the soul in the living body.

Thus, under Sidgwick the S.P.R. turned from seances to an attempt to find the "nonmaterial mind," *i.e.*, in effect, a measurable and demonstrable soul within the body. This disturbed the Spiritualists, however, because for them the spirit was not to be taken as just another part of the mind, but rather as man's highest, divine essence. The Spiritualists recognized that the S.P.R. had managed to secularize the soul.

Cerullo ably shows how this road led to the emphasis on telepathy and the like. If it could be demonstrated that minds can communicate without the aid of any of the senses, then it would have been proved that at least part of the mind is nonsensory and nonmaterial.

Cerullo's persuasive argument bears controversial fruit when the book describes the effect this had on the nascent science of psychology. The work of the S.P.R. was prominently featured at the first International Congress of Experimental Psychology and offered the possibility of yielding (in Cerullo's words) "as comprehensive an interpretation of personal identity as had yet been heard," namely that the waking self was but one stratum of a multilayered complete person. Freud, himself a corresponding member of the S.P.R., was also, of course, to offer a view of a multilayered consciousness, but Freud worked it out in greater detail and then supported his theory by showing that a therapy based on his notions was successful. Thus interest in

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psychic research declined, but not so much because evidence was lacking as because 20th-century psychology had more fruitfully developed the S.P.R.'s idea of the nonmaterial mind.

This book is well researched and easily readable. It is marred only by a rather silly, but very entertaining, chapter which profiles seven members of the S.P.R.—as if any conclusions could be drawn from such a sampling. Aside from that, Cerullo has given us a laudable mix of science, history, philosophy, theology, sociology and psychology.

David Weinberger
Assistant Professor of Philosophy,
Stockton State College

A Second Chance;
the Story of the New Quay Bird Hospital
Alan Bryant
St. Martin's Press, $11.95

It is a decidedly encouraging as well as delightful experience to read this anecdotal, engaging and informative book by a Welsh wildlife lover who, along with his wife and family, endlessly tries to save sea birds and sea mammals that become trapped within the careless technology of human beings.

Alan and Jean Bryant live on the west coast of Wales, where oil spills and other poisonings of the sea are wreaking havoc. The author and his wife, who brought no professional experience to their task, began to collect the helpless birds they found on the beach and to try to get them clean again so they could be released. Gradually, people for miles around also began to bring the Bryants sea animals and, on occasion, to lend a hand. From this evolved the New Quay Bird Hospital, a mom-and-pop enterprise that probably sends as many wild animals winging or swimming back to their natural lives as any of the more sophisticated wildlife-rescue agencies.

Cleaning contaminated sea birds and mammals is no easy task. Often, they have ingested too much of the poison; usually, however, the problem is that too little is known about how to treat them. Many die. It was formerly believed that the danger in cleaning birds was that the use of solvents or detergents would remove the birds' own protective natural oils that kept them waterproof. Not so, we learn. Waterproofing occurs because of the tiny

air space between the feathers. The surface tension of clean water will prevent penetration of these air spaces. Preening, it seems, is a necessary activity on a bird's part to keep the feathers in condition, properly overlapped like tiles on a roof.

But if water, and therefore the feathers, become contaminated, the bird will become waterlogged and drown. The Bryants learned to wash the birds in whatever would remove the contaminant, then rinse them repeatedly until the feathers were pristine. Some died anyway, but many lived to be released.

Several of the most appealing chapters deal with the Bryants' efforts to save sick and stranded baby seals, which are affected by the same water poisons as birds. It is evidence of the author's spell-weaving that he, a grown man, can say, casually, with a straight face, "We gave [the seal] a tiny tree of her own" at Christmas —and the reader, instead of snorting, is completely charmed.

The fact that the Bryants are not trained scientists is, in a way, one of the book's great assets. Few scientists could impart information and knowledge with such a sense of wonder. "Listen to what we discovered!" says Bryant to the reader, in effect—and his enthusiasm is contagious. Yet the Bryants not only lovingly treat each creature but keep careful and detailed records. They examine every animal minutely, including its droppings, and check their own findings against those of others. They get autopsies. They consider themselves amateurs, but they are naturalists in the purest sense.

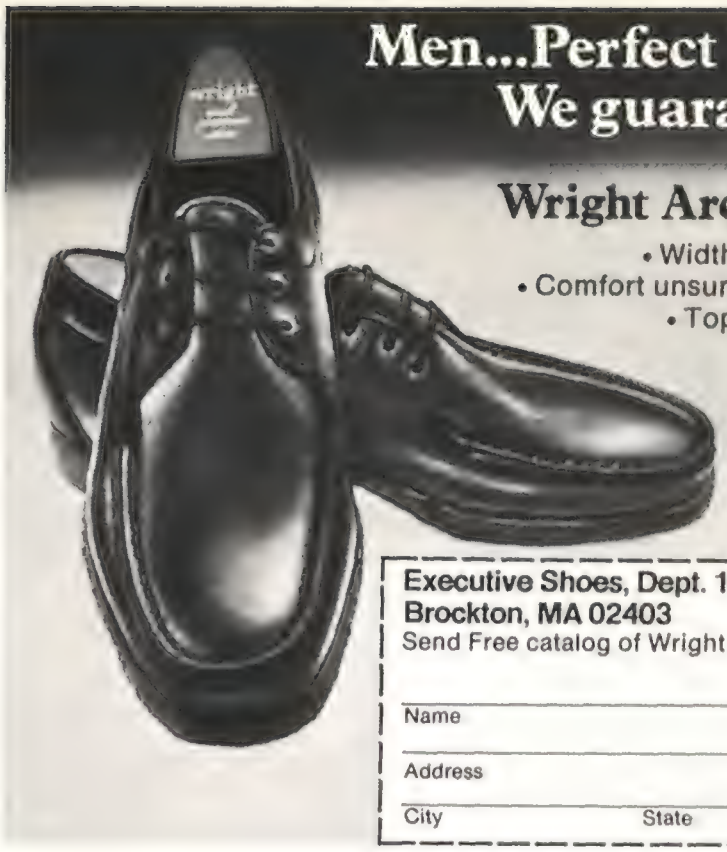
An important leitmotiv of this book is the message, loud and clear though never at all tiresome, that human beings are poisoning the seas as well as the lands, and that, no matter how hard the Bryants and others like them struggle, wildlife is dying.

Bryant reads a postmortem on a beached dolphin that he, his wife and others tried to save. The laboratory reported: "The probability that the animal had been affected by pesticides cannot be ruled out."

"Pesticides!" cries Bryant. "In the sea! God help us all."

Patricia Curtis

Author of article about animal shelters, SMITHSONIAN, September 1982



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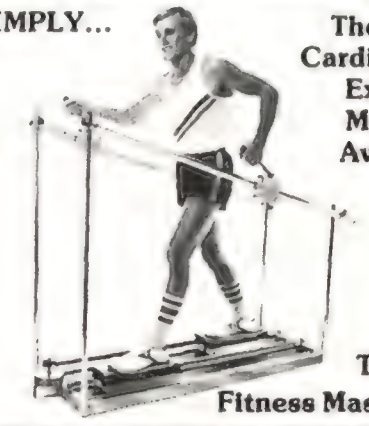

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Martin's Hundred
Ivor Noël Hume
Alfred A. Knopf, $17.95

In 1619, a group of London speculators established Wolstenholme Towne, the core of a 20,000-acre plantation settlement along the banks of the James River, seven miles from Williamsburg, Virginia. Three years later, 78 colonists living in the Virginia settlement—known as Martin's Hundred—were reported killed in an Indian uprising. All but destroyed, Martin's Hundred soon passed into historical oblivion, its people and way of life only hinted at in surviving documents.

Those events of the 17th century were not on the mind of Ivor Noël Hume, a historical archaeologist, when he began excavation work, in 1970, at the 18th-century Carter's Grove Plantation, near Williamsburg. As resident archaeologist at Colonial Williamsburg, whose foundation owns the Carter's Grove site, Noël Hume was charged with locating the plantation's "vanished" buildings. He failed. Instead, he and his crew found the remains of the 17th-century Martin's Hundred—several hundred objects that offer an unprecedented view of early British Colonial life in Virginia. (No foundations or other evidence of Jamestown's fortified settlement, dating from 1607, have ever been found. Tourists are told the site has eroded into the river.)

In *Martin's Hundred,* Noël Hume gives us no mere inventory of the remains of buildings and the trove of artifacts—from delftware and tobacco pipes to the only visored military helmets ever found intact in America—revealed during four years of digging that ended in 1980. An engaging, jargon-free academic, he writes brilliantly and enthusiastically about the excitement and frustrations of his find. This is "the warts-and-all anatomy of an excavation," he says. It is also a thoroughly absorbing account of a tenacious scholar's search for the hidden meanings of coffin nails, gold threads and copper farthings—a scholar who feels the "thrill of the chase" about his work, and it shows.

Consider the coffin nails. Early on, the excavation team found three graves (there would be many more), each of which contained unbent nails, measuring more than two inches long, that lay in a row from skull to shin. Clearly, they had been em-

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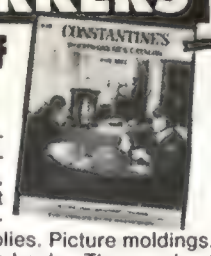

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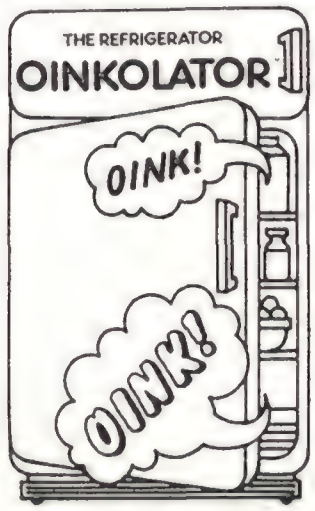

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bedded down the center of the coffin lid, falling onto the remains when the wood rotted. Why, Noël Hume wondered, the need for nails down the center of the lid? Generally, he knew, such lids were made of a single board, nailed down at the edges. Could there be "datable, stylistic significance" about the lids? (Dating was a constant problem at the site.) Or were they the work of some "Crazy Coffin-Maker of Carter's Grove"?

At first, the author guessed the lids might have been made from two narrow boards joined by a nailed batten. Then acting on his hunch, he had a batten-lidded coffin built, with appropriate nails, and buried it. When its walls, wafer-thin to hasten decay, became simply stains, he would look to see where the nails had fallen. Before that happened, he learned how wrong he had been about the coffins' construction.

Through a chance encounter with another scholar, Noël Hume found out about a 1651 engraving of English gravediggers standing beside coffins with A-shaped lids. Reflecting on the coffin nails at his site, he realized all the nails lay with their heads to the right, "as they would if the lid had been made from two, butting boards, the right overlapping the left." Obviously, not all lids were flat.

Further research, involving the writings of an 18th-century folklorist and paintings and engravings of 16th- and 17th-century funerals, convinced him that his coffin lids rose to a ridge to display decorative mortuary cloths, or palls, of the kind often used in 17th-century English parishes. Now he must see an intact example of a 17th-century coffin. Perhaps in the vault of an English church? He has little success, but in a Nottinghamshire church does view a marble sculpture of a Martin's Hundred-type coffin that memorialized one Sir Gervaise Clifton, who died in 1669.

Noël Hume recounts innumerable variations of the coffin-lid story—meandering researches through records, paintings, census data, and other resources that often illuminated the postholes and pottery fragments of his early Virginians. "Before we were through, our net stretched to ruined forts in Northern Ireland, a mountain pass on the West Indian island of St. Eustatius, through the storerooms of the Tower of London, among crumbling coffins in the vault of an English parish church, past the wreck of a Dutch East Indiaman off the Australian coast, to a typically bizarre British murder investigation, and to a man who had escaped from prison hidden in a box of books."

The author systematically and patiently explains the significance of the artifacts, the importance of such techniques as cross-mending, the ground plan of Martin's Hundred's palisaded fort, and the evidence of a far-from-crude way of Colonial life. But above all, he celebrates the toils and rewards, the craft and science of historical archaeology. Often, he finds himself "sitting alone on creaking limbs," venturing another conjecture about centuries-old events. He does so unafraid, filled with curiosity. Look at what he has brought back to us!

Joseph Barbato
New York critic

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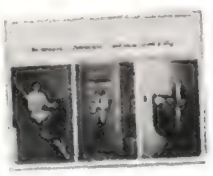

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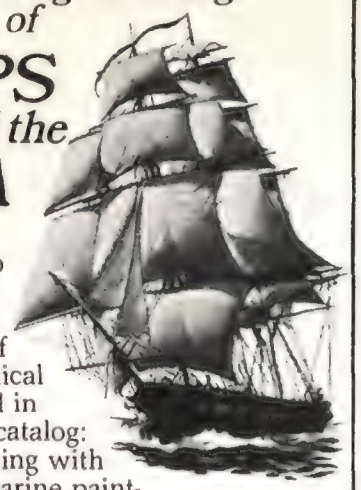

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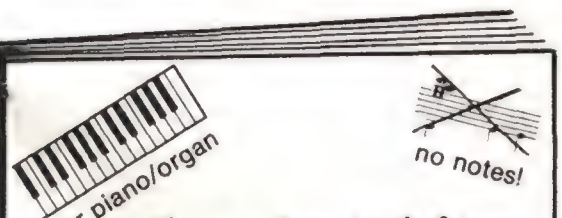

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Smithsonian highlights

At the National Museum of American Art, two artists are being featured who crossed paths while seeking their destinies. Cincinnati-born Elizabeth Nourse was drawn in 1887 to the Continent—especially, the ateliers and salons of Paris—where she found her subject matter. Less than ten years later, Russian-born Louis Lozowick (see *Highlights continued*) sailed the Atlantic in the other direction—later to find his inspiration in the vigor of New York City. Both shows run through early April.

Special January exhibits and events

National Museum of African Art
African Emblems of Status (through April 3).
Nupe Art and Patronage (January 9; 3 P.M.) Lecture by Judith Perani.
Hausa Art in Northern Nigeria and *Hausa Village* (January 15, 16; 3 P.M.) Films.

National Air and Space Museum
Space Fiction Film Series (January 7, 14, 21, 28; 7:30 P.M.) Includes *The Black Hole* and *Invaders from Mars.*
The Fires of Winter (January 8; 9 A.M.) Monthly sky lecture.
Explorer I Revisited (January 26; 8 P.M.) Lecture by William H. Pickering.

National Museum of American History
Atomic Clocks (indefinite closing date) Traces development of atomic timekeeping from scientific theory to commercial practice.
The Workers' World: the Industrial Village and the Company Town (through April 15).
Smithson String Quartet (January 25, 26; 7 P.M.) Lecture followed by concert.

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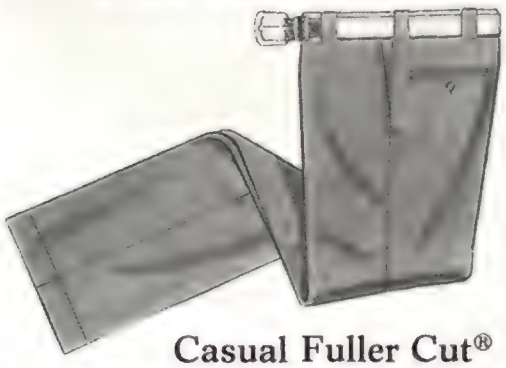

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Hirshhorn Museum & Sculpture Garden
The Eight and the Independent Tradition in American Art (January 13-March 15) Exhibit of 47 works by Robert Henri, John Sloan, George Luks and others.

Cooper-Hewitt Museum (New York)
French Moderne: Furniture and Interiors and their Influence in the 20th Century (January 24, 31; February 7, 14, 21; 6:15 P.M.) Lecture series.
Louis Comfort Tiffany: The Quest of Beauty (January 18-April 17).

Freer Gallery of Art
Boxed In: Japanese Ceramics and their Storage Boxes (through January 31).
Chinese and Japanese Lacquer (through February 28) Sixty containers and utensils from Sung Dynasty through 19th century.
The Monk Chogen and the Renaissance of Japanese Buddhist Sculpture in the 13th Century (January 11; 8:30 P.M.) Lecture by John Rosenfield.

National Museum of American Art
Elizabeth Nourse, 1859-1938: A Salon Career (January 14-April 17) First major retrospective of American-born artist who lived in France.
The Prints of Louis Lozowick (through April 10) See *Highlights continued.*

Smithsonian events

For price information, and tickets to Resident Associate events, call 357-3030:
Manet and His World (January 29) All-day seminar with Michael Fried, Theodore Reff, Beatrice Farwell, George Mauner.
John Barrymore: A Centennial Tribute (January 25; 7 P.M.) Reception followed by rarely seen film footage and *Reunion in Vienna.*
BBC Natural History Film Festival (Six Wednesday evenings beginning January 26) Series of 12 new wildlife films.
American Picture Palaces (January 20; 8 P.M.) Slide-illustrated lecture by David Naylor.

Regional Events Program

In January and February the Regional Events program will visit the Southwest. Lectures and seminars in Las Vegas (January 28-February 3) will feature quasars, plate tectonics and the Smithsonian museums. Highlights of the Phoenix series (February 11-20) are lectures and seminars on historic preservation and World War II aviation. Associates residing in these areas should have received invitations. For further information, write: Regional Events Program, 1208 A&I, Smithsonian, Washington, D.C. 20560.

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A Metropolitan Opera performance of *Der Rosenkavalier* at the Kennedy Center is featured on the Eleventh Musical Weekend, April 29 to May 1. During the weekend the Division of Musical Instruments and the Friends of Music provide all meals, hotel accommodations for two nights, and musical activities. For further details and reservations, write: Musical Weekend, Room 4124, National Museum of American History, Smithsonian Institution, Washington, D.C. 20560.

Membership benefits

Most Smithsonian museums are open 10 A.M. to 5:30 P.M. Members are invited to begin their visit at the Associates Reception Desk in the castle, where a warm welcome and special printed materials await them, 10 A.M. to 4 P.M. daily. Additional benefits include a half-hour orientation to the 13 museums; dining in The Court; and discounts in most shops.

For a free previsit information packet, send postcard request to Associates' Reception Center, Smithsonian Institution, Washington, D.C. 20560, or phone (202) 357-2700; for hearing impaired, TDD (202) 357-1729.

Radio Smithsonian

Newly discovered insects in Peru, the creator of cartoon character Woody Woodpecker, and Carrie Bow Cay are among January listings for Radio Smithsonian. To find out which stations in your area carry these programs, write: Smithsonian Office of Telecommunications, MNH Room C222B, Washington, D.C. 20560.

Smithsonian Institution Traveling Exhibition Service

SITES circulates exhibitions to hundreds of cities outside Washington. To sponsor a show in your community, write: SITES, Smithsonian, Washington, D.C. 20560. Here are some January exhibitions:

Washington, D.C. (January 20-May 22) *Traditional Crafts of Saudi Arabia,* The Textile Museum.

Crawfordsville, Indiana (January 1-30) *Impressions/Expressions: Black American Graphics,* Wabash College.

Buffalo (January 22-February 20) *We'll Never Turn Back,* Museum of African and Afro-American Art.

Pittsburgh (January 15-February 13) *American Drawings IV,* Pittsburgh Center for the Arts.

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Highlights continued

Down and out at the NMAA

In 1906, among the immigrants who came through Ellis Island, 14-year-old Louis Lozowick disembarked after a dangerous and illegal "underground" journey from Kiev. At first sight, he later wrote, the Manhattan skyscrapers confronting him "looked forbidding" and "breathed a chilly indifference." He had grown up in a one-room shack with a straw roof and earthen floor. Yet by the time he died in 1973, Lozowick had given to Americans a personal and humanistic vision of the Machine Age city and its people. "The Prints of Louis Lozowick," on view at the National Museum of American Art through April 10, presents 70 such works that span 50 years.

In New York, Lozowick took to the city streets with sketch pad in hand. Unlike the Precisionists, whose cool, hard-edged cities often betray no human presence, Lozowick's view started with the working man. In many lithographs, such as *Brooklyn Bridge Repairs* (below), man is a small figure in the urban landscape, but he has created the city's order and is maintaining it. Frequently, in the disordered years of the Depression, Lozowick focused on the worker himself—out of work, or struggling to eke an existence from the streets. Essentially an optimist, Lozowick was also a realist, a combination that gives his work interest and tension. *Constance Bond*

Lozowick did *Interior*, his local train station, during last year of his life.

During 1930s, Lozowick recorded strife of the Depression, as in *Strike Scene*.

Cables overlie Manhattan cityscape in *Brooklyn Bridge Repairs*, 1938.

Hard times are captured in *Thanksgiving Dinner*, 1938—a Bowery soup kitchen.

Dead End, 1941, depicts hobos huddled on a city dock, living on the fringe.

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Okefenokee Swamp March 26-April 2: Canoe through this beautiful primeval refuge with its moss-draped cypress trees and array of springtime flowers.

New Orleans April 10-17: Learn about the history, architecture and cuisine of New Orleans and southern Louisiana.

Big Bend April 13-22: Hike the spectacular trails in this southwest Texas wilderness.

Washington, D.C.: Power and Style April 26-May 1: Spend a day in Congress; visit charming neighborhoods, historic sites and museums with local guides.

Crafts Today May 5-8: A seminar for the novice and experienced collector held in conjunction with the first Washington, D.C., Crafts Show.

Kentucky Bluegrass May 12-19: Visit historic homes and horse farms in Louisville, Lexington and Shakertown to discover the area's rich heritage.

Florida Keys May 13-22: Travel from Miami to Key West on this active outdoor tour of snorkeling and canoeing. Concludes with overnight boat trip to the Dry Tortugas.

Wine Cellars of Sonoma and Napa Valleys May 22-28: Intensive study of California wines includes discussions with wine-masters and special comparative tastings.

Southwest Archaeology May 28-June 7: Camping trip includes Mesa Verde, Monument Valley and river rafting.

San Juan River June 8-16: Spectacular scenery and an exciting white-water trip through the canyons of southeastern Utah.

Treasure-Houses of Early America June 12-19: Architecture and decorative arts along the Delaware, Brandywine and Chester rivers. Includes two days at renowned Winterthur.

Washington "Anytime" Weekend: Brighten your winter with a visit to your choice of Smithsonian museums. Package includes hotels, meals, Tourmobile, and exclusive tour of Smithsonian castle. Applications and payment must be received at least ten days prior to arrival.

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Indonesia March 26-April 15: Cruise beyond the ordinary to the islands of the Java Sea, including Bali and Komodo. Study natural history and traditional crafts; observe local customs and rituals. Visit Singapore and Hong Kong.

Canals and Old Masters April 14-28: Art museums, historic tours and spring flowers highlight a four-day stay in Amsterdam. From Arnhem, sail on rivers of Holland and Belgium, ending with visits to Bruges, Ghent, Antwerp and Brussels.

Rouen and the Norman Countryside April 16-May 1 or October 1-16: The ancient city of Rouen provides a superb setting for a program of walking tours, museum visits and special excursions nearby, including Norman churches, elegant beach resorts and Monet's Giverny.

Baja Mexico April 29-May 8: Adventure cruise in the Gulf of California. Observe whales and dolphins plus the nesting birds of the Midriff Islands.

Russia May 6-21: Leningrad, Moscow and Riga: See the Hermitage, the Kremlin and other fabulous museums, palaces and landmarks. Visit schools, factories, clinics and enjoy the best of Russian theater.

Ecuador and the Galápagos Islands May 8-20: After visiting Quito and the Andean countryside, board the *Santa Cruz* for a study voyage to Darwin's famed islands.

Seminar in Florence May 13-29: Study the Florentine Renaissance while living in a 15th-century villa. Attend lectures, field trips, Italian language classes and special evening activities.

Odyssey of Flight May 22-June 6: An exciting opportunity to visit the Paris Air Show, the Musée de l'Air, Britain's Shuttleworth Collection and more with experts from the National Air and Space Museum.

Alpine Countryside May 28-June 12 or September 10-25: Study folk art and architecture, flora, fauna and geology in a charming Austrian mountain village.

Wild Highlands of Scotland June 2-19: Based in a castle, observe shy wildlife and the brooding landscapes of loch and moor. Visit the Isle of Skye and meet local residents to learn about the region.

Cotswolds Countryside June 26-July 11 or July 10-24: Archaeological sites, market towns, woolen mills and historic homes in this quiet corner of old England.

European Waterways July 12-24: After two days in Paris, board the *Argonaut* in Rouen. Visit museums in Bruges and Amsterdam before cruising the Kiel Canal to Copenhagen.

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Genealogical Research March 13-18: Learn from leading authorities how to trace your family history.

Contemporary Book Publishing March 20-25: The director and staff of the Smithsonian Institution Press and guest experts highlight new developments in editing, design, production and marketing. Includes lectures by a leading author, bookseller, agent and publishing executive, and tours of firms.

French Impressionist Painting March 27-April 1: Lectures and tours with William Kloss of the masterpieces by Monet, Degas, Renoir and others in the famous collections of Washington's museums.

The Golden Age of Flight April 10-15: The National Air and Space Museum staff and well-known authors focus on the sensational record flights and the countless companies that boomed or busted in the period between the wars. Includes tours of the surviving aircraft.

Chinese Ceramics April 24-29: Connoisseurship of the timeless beauty and outstanding craftsmanship of renowned masterpieces. Highlights exquisite export wares, enameled porcelains, recent discoveries, dating controversies, detection of fakes and the market today.

Quilting with the Experts May 15-20: Intensive workshops with Maria McCormick-Snyder, Jeffrey Gutcheon and Mary Penders. Includes "Color and Design," "Precision Piecing," "Log Cabin Variations," "Creative Hand Quilting" and "Sampler Quilts."

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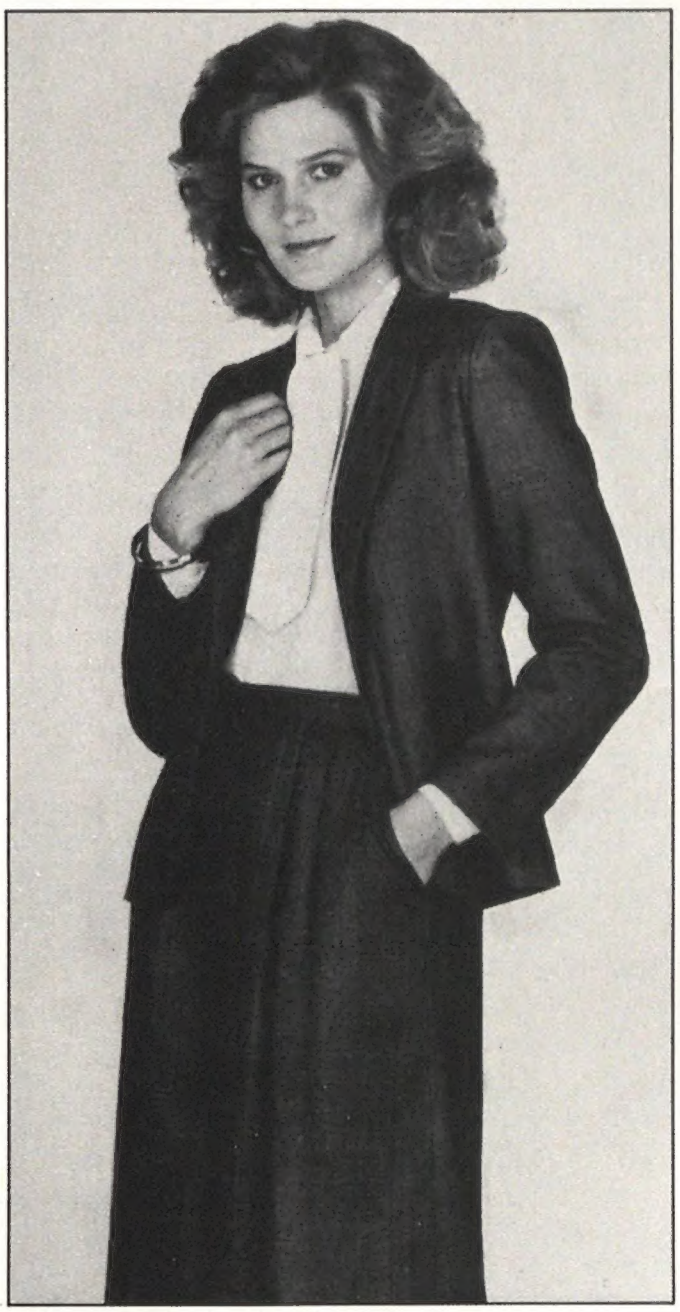

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'No, I mean beige. That light tan job.'

'Sir, you are mistaken.' "

I agreed that Finian would never recognize his own rainbow these days. As anyone shopping for clothes, china, shoes or house paint already knows, red is no longer red. It's Chianti. It can also be paprika, persimmon or poppy. Brown is caramel, cinnamon, taupe, chocolate or cocoa. Toast is lighter than ginger, which is more like rust.

I came across a blouse in a mail-order catalog recently. There were four equally confusing color choices. By avocado, did they mean the pit or the peel? Was the origin of "smoke" cigar, chimney or Pittsburgh? What really stumped me was the last color choice: mist. I feel certain that I would be able to identify other colors based on weather conditions, such as smog (grayish-white) or partly cloudy (whitish-gray), but mist—by its very nature—seems so ethereal. I decided the blouse was see-through.

Purple is dusty plum. Yellow is warm cornhusk. White is winter wheat. Not to be confused with Shredded Wheat.

I decided to consult an expert. "The names are there primarily as an attractive addition to the color," says Linda Fulp, manager of the color studio and a color stylist for the Sherwin-Williams paint company. She's been in the paint industry for the past 14 years and yes, she says, exotic names do help sell the product. "It's really a mental image you conjure up." Names are invented by a color committee, and so far, that company alone offers 1,100 possible hues, enough to cover virtually every trend imaginable in the public palette.

It changes every decade. The Sixties were Day-Glo, Pop-Art glossy. The Seventies were back-to-nature-crunchy-granola beiges and browns. The Eighties, she says, are romantic pastels, warm grays and mauves. A rose by any other name would be dusty phlox.

A name can make or break a paint. Fulp remembers one shade saddled with the unfortunate name "peppy purple." "It just never did anything," she says sadly. "We finally retired it." On the other hand, there's antique white. "That name alone sells the color more than the color does." The color is off-white. The appeal is snob.

"Now when you get into colors like, say, Anjou pear, you appeal to a certain segment of the population. They tend to be more decorator oriented."

But even the colorist has to admit there are a few names that might not conjure up the right image for some. Shaggy dog might be one. Another is city pigeon. "It's a gray brown," she laughs. "It looks like a city pigeon. People get punchy after awhile naming paints."

And who is likely to do their powder room in city pigeon?

"There are a lot of people here in Cleveland who feed the pigeons," Linda Fulp says. "They might like it."

Even the hottest shade can fade. Paul Preuss, a spokesman for Ford Motor, says he remembers when the auto company launched an unusual color drive ten or 12 years ago. "We had hulla blue," he says. "Get it? Hullabaloo?" Then there was Freudian gilt, and anti-establish mint. Now, he says, the trend is toward softer colors, toward softer images. Desert tan glow. Polar white.

As for Preuss, he's just leased a car for the coming year. Did he choose bright bittersweet? Or fawn (the color "of a little baby deer")? Perhaps the midnight academy blue?

"No," he says, "black."

Not sable, ebony, or midnight coal?

"Just black."

The earth tones have been popular for some time. Perhaps on the drawing board for next year are mud, mold and mulch. For the gardening set, of course. Shades appealing to environmentalists might be oil spill, or the ever-popular sludge.

Colorists can't always count on customers conjuring the same image they do. Ecru, for example, sounds like a third-world country to me.

Yesterday I went shopping for a pair of boots. The salesman said the particular pair I wanted came in only one color: malt. I conjured up the image of a pale ale on tap. I was wrong. Just for fun, I decided to test my friendly color consultant in Cleveland.

"Malt?" said Linda Fulp. "I would say that's a warm reddish beige."

"Wrong," I said. "Dark brown."

"Well," she said with authority, "that's the *outside* of a malted milk ball."

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